THE

NINTH ANNUAL REPORT

FROM

THE GOVERNORS

OF THE

MADRAS UNIVERSITY,

1849-50.

MADRAS:

PRINTED BY REUBEN TWIGG, AT THE CHRISTIAN KNOWLEDGE SOCIETY'S PRESS, CHURCH STREET, VEPERY.

1850.

VII

FUNDAMENTAL RULES.

1st. That it is expedient that a Central Collegiate Institution or University should be established at Madras.

2d. The Madras University to consist of two principal departments, a College for the higher branches of literature, philosophy and science, and a High School for the cultivation of English literature and of the vernacular languages of India, and the elementary departments of philosophy and science.

3d. The governing body to be denominated the President and Governors.

4th. The College department to be placed under a Principal and Professors. The High School under a Head Master and Tutors.

5th. Members of all creeds and sects shall be admissible; consistently with which primary object, care shall be taken to avoid whatever may tend to violate or offend the religious feelings of any class.

6th. It shall form no part of the design of this Institution to inculcate doctrines of religious faith, or to supply books with any such view.

7th. No pupils shall be admissible in any department, but such as are able to read and write the English language intelligibly.

8th. Pupils shall pay according to such rates as may be hereafter established by the President and Governors.

9th. Should any sums be hereafter bestowed upon the Institution for the purpose of endowing Scholarships in the High School or Studentships in the College, the Students and Scholars appointed to them shall be admitted in such manner as may be determined by the President and Governors.

10th. The first President and Governors shall be appointed by the Governor in Council. There shall be 14 Governors, 7 of whom shall be Native Hindoos or Musselmauns, besides the President. The appointment of the President and 6 of the Governors shall rest permanently with the Governor in Council.

11th. Vacancies shall be effected by any continued absence from the limits of Madras for the space of two years, or by departure for England

or for any permanent residence in any other presidency, or by resignation addressed to the Secretary, or by removal under order of the Governor in Council.

12th. Every Donor to the amount of 5,000 Rupees shall if, and while, resident within the limits of Madras, become a life Governor, and, if not resident in Madras, shall have power to appoint a Governor who is so resident (subject to the confirmation of the Governor in Council) to hold on the same terms as the other Governors. But in all cases of persons so becoming life Governors, the Governor in Council may appoint a Governor who is not a Native, in case such life Governor or his Appointee be a Native, and the remaining Governors may elect a Native Governor in case such life Governor or his Appointee be not a Native.

13th. The President and Governors shall frame general rules for conducting the current affairs of the Institution, and they shall meet not less than once per month, five forming a quorum.

14th. In all questions to be decided by vote the President shall have a casting vote.

15th. The first business to be done at all Meetings when the President shall happen to be absent, shall be to appoint a Chairman who shall possess a casting vote.

16th. All rules and regulations to be made by the President and Governors shall be confirmed within six months by the Governor in Council, in default of which they shall be considered thereafter as annulled.

17th. The Governor in Council shall have power to remove not only any President or Governor, but also all persons holding any office or appointment whatever in the Institution. The President and Governors shall have power to remove all persons holding any office or appointment under them in the Institution.

18th. In case the Governor in Council shall hereafter appoint any Board of Public Instruction, the Members thereof shall be Visitors of this Institution, and shall have power to call for all papers and information. They shall also elect the 8 Governors who are not nominated by the Governor in Council.

19th. The President and Governors shall make one annual Report to be furnished to the Governor in Council, or to the Board of Public Instruction, as the Governor in Council shall direct, which Report shall contain an account of receipts and disbursements, a list of donors and subscribers, and a general statement of their proceedings and of the progress of the Institution

NINTH ANNUAL REPORT OF THE PRESIDENT AND GOVERNORS OF THE MADRAS UNIVERSITY.

16*th March*, 1850.

To

The Right Honorable the
GOVERNOR IN COUNCIL,
Fort Saint George.

RIGHT HONORABLE SIR,

1. We have the honor to submit our Ninth Annual Report on the state and progress of the Madras University.

2. Our care and duties have been altogether confined during the past year to the High School department of the Institution, which alone has been brought into operation; and as no correspondence with or instructions from Government, on any subject connected with those duties, have passed since the date of our last Report, and as no alteration has occurred in the scheme of tuition or management of the School, our present address will be short.

3. The number at the date of our last Report was 170. The present number is 173. The average attendance has been 155, out of 168, the average number of the School.

4. The last annual Examination took place in the 3d week of December last, three months earlier than had been usual, it having been found a more convenient period for many reasons, and particularly with a view to a more mature consideration of the result of those Examinations before drawing up the Report and holding the Anniversary. The period of study since the last Examination having been thus materially abridg-

ed, a corresponding deficiency in attainments was, of course, to be anticipated. But, under no circumstances would the candidates for Proficients' degrees, and the other scholars of the 4th Class, have exhibited a measure of acquirements equal to that reached by some scholars on former occasions; although some of them have fully reached, and others surpassed, the absolute requisitions for obtaining a degree. On former occasions scholars have passed examinations in Mental Philosophy, which has not formed a subject of study during the past year. Neither have any scholars pursued their Mathematical studies to the extent which had been previously exemplified. On the other hand it should be noticed that in General Literature, and in History, and in the Science of Political Economy, some have made advancement beyond what is absolutely demanded by the scheme of instruction originally laid down.

5. We shall, according to custom, append to this Report the written questions and copious specimens of the answers and performance of the Senior Classes, from which a judgment of their proficiency can be formed.

6. We shall also append the reports, in full, of the several public examiners. These reports are peculiarly valuable from the discriminatory details and suggestions which characterize them. We think it needless to add any observations—but, with regard to those with which we are favored by the examiners in the Vernacular languages, we would desire to note that they entirely agree with the impressions we have recorded in the Minute of our Board, dated 26th July, 1841, and printed in the Appendix of the 1st Annual Report, and also more particularly with those recorded in our 4th Annual Report, Paras. 22 and 30, in which we advert to the very interesting letter of Captain Losh, of 9th February, 1843, appended to the 2d Annual Report. In this our 4th Report we dwell much on the useless and fantastical verbal difficulties imported into the study of the Vernacular languages, by those teachers who plume themselves on such perversely ingenious artifices; and

we advocate a more rational and more philological system, with a view to strengthening the meaning and power of words, and enriching the Vocabulary of Native tongues—more especially as regards *prose* composition. To that object we still desire to direct our attention—and we took occasion to address Government some time ago upon a plan of instruction, with a view to those results which we wished to bring into operation, but which involves some additional expense.

7. We recommend T. Vencata Charry and H. Kerakoose as qualified for Proficients' degrees of the 2d Class, and C. Saumoo Row, P. Runganathum, B. Kristnasawmy, and S. Soondarum for degrees of the 3d Class. Two other scholars, P. Rungiah and P. Viziarungum, have qualified themselves for degrees, but they desire to remain longer in the School with a view to obtaining degrees with a higher grade of honor.

8. The following scholars have been nominated to vacant Government Scholarships. P. Rungiah, P. Viziarungum, T. Teeroomala Row, T. Durmaroyen, R. Ragoonatha Row, V. Rajahgopaul, T. Mootoosawmy, G. Sashachellum, V. Ruthnasabaupathy, S. Vilvanathum, and V. Dorasawmy.

9. We prefix to this Report a copy of the Fundamental Rules. We append a Statement of the Studies pursued by the several classes during the last year, also the Rules for awarding Government Scholarships, and those founded by the Trustees of Pacheappah's Charities—also the Rules for awarding the Elphinstone Prize for the best English Essay, and Pacheappah's Prize for the best Vernacular Exposition of some subject treated of by an English author; each of these compositions being to be read by their authors at the Anniversary.

10. We think it right to call the attention of Government to a circumstance interesting in itself, and still more so in its probable consequences. This is, the selection of the Me-

dical Profession by a Bramin Scholar of the High School, D. Sashiah, who has been received as a pupil in the Government Medical School, and is the first, and at present the only Bramin within this Presidency, who, overcoming all unworthy prejudices, has stepped forward to prosecute those studies, which, as enabling a man to alleviate the sufferings of his brethren, must, more eminently than others prove beneficial to the Native community.

11. In conclusion we desire to express our acknowledgments and thanks to the Public Examiners who gave their voluntary services at the last Annual Examination, namely, Mr. John Bruce Norton, Mr. Edward Salmon, and V. Ramiah Iyengar, and also to the Government Translators, Mr. C. P. Brown, Mr. W. H. Bayley, and Captain J. J. Losh, who attended under the requisition of Government. We have to express our entire satisfaction with the Head Master, the Second Master, and the Tutors generally.

We have the honor to be,

Right Honorable Sir,

Your most obedient Servants,

(Signed) GEORGE NORTON, *President*,
„ J. WYLIE,
„ JAS OUCHTERLONY,
„ JOHN BRUCE NORTON,
„ C RUNGANADUM,
„ C. STREENEVASEN PILLAY.

APPENDIX

Scheme of Studies pursued by the Scholars of the High School of the Madras University, during the year 1849.

English Department.

Subjects.	Books.	Portions read during the year.	Portions for examination.
	4th Class, Upper Rank.		
Philosophy of History	Smyth's Lectures on Modern History	Vol. I., Introductory lecture, and lecture on Mahommed. Vol. II., Lectures 27—36.	The whole.
Indian History	Murray's Indian History	Vol. I., Chapters 8—11. Vol. II., Chapters 1 and 2.	The whole.
History of Modern Europe	Russell's Modern Europe	Vol. II., Lectures 66—77	
English Literature	Shakspeare's Dramas	The Tragedy of Richard III.	The whole.
Natural Philosophy	Outlines of Optics, with additional calculations from Griffin's Optics	The whole	The whole.
Spherical Trigonometry	Snowball's Spherical Trigonometry	Chapters 1—4	The whole.
Political Economy	Marcet's Conversations on Political Economy	Conversations 1—13	The whole.

N. B.—Those Scholars of the 4th Class that offered themselves as Candidates for Proficients' degrees were required to pass an additional examination in the following subjects, which comprise the greater part of their more important previous studies: Geography, English History, Norton's Rudimentals, Arithmetic, Algebra, Euclid, Plane Trigonometry, Elements of Mechanics, Astronomy, and Mineral Chemistry.

	4th Class, Lower Rank.		
History	Russell's Modern Europe	Letters 1—9, and 54—65	The whole.
Poetry	Dodd's Beauties of Shakspeare	Julius Cæsar and King Lear	The whole.
	Calcutta Poetical Reader No. IV	Chapter III., Lessons 1 & 2 and 18 to 20	The whole.
Euclid	Williams' Symbolical Euclid	The first 21 Propositions of the 11th Book	The whole.
Algebra		Problems	
Plane Trigonometry	Snowball's Plane Trigonometry	Plane Trigonometry, the first 5 Chapters, part of Chapter 6, and Appendices 1 and 2	The whole.
The Steam Engine	An elementary account of the Steam Engine	The whole	The whole.
Pneumatics	Elementary treatise on Pneumatics	The whole	The whole.
	3d Class, Upper Rank.		
English Grammar	Murray's large Grammar.	The Appendix	The whole.
Geography	Symonds' Geography of India	Chapters VII. VIII. & IX. particularly, and the preceding Chapters generally	The whole

Subjects	Books	Portions read during the year.	Portions for examination.
Geography	Guy's Geography	Europe. The text and select portions of small type.	The whole
History	Goldsmith's History of England	From Elizabeth to George I.	The whole
Political Government	Norton's Rudimentals	Discourses I and II	The whole
Poetry	Calcutta Poetical Reader No. III	Chapter V	The whole.
Arithmetic	Bonnycastle's Arithmetic.	Miscellaneous portions	The whole of Arithmetic.
Geometry	Euclid	Books II., III. and IV	The whole
Algebra	Pinnock's Catechism of Algebra	As far as Simple Equations	The whole
Natural Philosophy	Introduction to Natural Philosophy	Mechanics	The whole
	3d Class, Lower Rank.		
English Grammar	Murray's large Grammar.	Part II., Etymology	The whole.
Geography	Symonds' Geography of India	Chapters III., IV., V. & VI.	The whole
	Guy's Geography	Europe. The text and select portions of small type	The whole.
History	Goldsmith's History of England	From Henry II. to the end of Elizabeth	From Henry II to Elizabeth
Poetry	Calcutta Poetical Reader No. III	Chapter II	
Arithmetic	Bonnycastle's Arithmetic	Simple and Compound Interest, Discount, Equation of Payments, Square and Cube roots	The whole of Arithmetic
Geometry	Euclid	Book I	The whole.
Algebra	Pinnock's Catechism of Algebra	Part I	The whole
Natural Philosophy	Introduction to Natural Philosophy	First three Sections in Astronomy	The whole
	N B —The boys of the third and fourth Classes practised English composition twice a week.		
	2d Class, Upper Rank.		
History	Goldsmith's Rome	Chapters 21—23	The whole
Geography	Guy's Geography	Europe	Gt Britain, France, Germany & Russia
Arithmetic	From the Master	Vulgar Fractions, Practice, Decimals, and Duodecimals	The whole
English Grammar	Murray's Abridgment	The whole	The whole.
Spelling	Carpenter's Spelling Assistant	P p. 97—116	
Poetry	Gay's Fables	Part I Fables 40—50	
		Part II. Fable 1	The whole
	2d Class, Lower Rank.		
History	Goldsmith's Rome	Chapters 1—16	From Chapter 9th —16th.
Geography	Hogarth's Exercises.	Europe, Asia, and Africa	Asia and Africa.
Arithmetic	From the Master	Reduction, and 1st 4 Rules in Vulgar Fractions	Reduction and 1st 4 Rules in Vulgar Fractions.
English Grammar	Murray's Abridgment	The whole	The whole
Spelling	Carpenter's Assistant	From letter "G" p. 61 to letter "Q" p. 72	P. 66—72
Poetry	Gay's Fables	Fables 32—42, part I.	The whole

Subjects	Books.	Portions read during the year.	Portions for examination.
	1st Class, Upper Rank		
English Grammar	Murray's Abridgment....	The whole	The whole.
Arithmetic.....	From the Master	Four Compound Rules, Reduction, and Reduction of Vulgar Fractions.....	The whole.
Geography	Hogarth's Exercises.....	Europe and Asia ...	The whole
Spelling.....	Carpenter's Assistant.....	From the letter "S" p. 14 to the letter "B" p. 27 ...	
Reading, Poetry..	English Reader No. II. or Gay's Fables.....	From Fable 9 to Fable 21..	Fables 11, 14 & 17.
Reading, Prose..	Goldsmith's Natural History.....	From p. 114 Chapter X to p 231 Chapter XVIII. .	Chapter X p. 114—124, Chapters XI. XV. XVI. and XVII.
	1st Class, Lower Rank.		
Reading.....	Goldsmith's Natural History.....	From Chapter 2 to Chapter 9..	From Chapter 2 to 8—or from page 6 to page 82
Geography.	Hogarth's Exercises.....	Europe, Asia, and Africa...	Europe and Asia.
English Grammar	Murray's Abridgment.....	From the beginning to the end of Syntax..	Etymology and Syntax, with Parsing
Arithmetic	From the Master.....	The four Compound Rules	The four Compound Rules.
Spelling.	Carpenter's Spelling Assistant.....	From p 5—20 ...	From p. 5—17.
	Preparatory Class.		
Reading.....	Æsop's Fables.....	From Fable 1—90.....	From Fable 1—70.
English Grammar	Elements of English Grammar.....	The whole.....	Orthography and Etymology
Geography.....	Clift's Geography.....	Asia, Africa, and America...	Asia and America
Arithmetic.....	From the Master.....	The four Simple Rules	The four Simple Rules.

Vernacular Department.

Subjects.	Books.	Portions read during the year.	Portions for examination.
	Tamil, 4th Class, Upper Rank.		
Grammar.....	Nunnool.....	Mayeethoo poonareal Vooroopoo poonareal Payareal	Mayeethoo poonareal Vooroopoo poonareal Payareal.
Poetry.....	Theroo Kural.....	From Chapter 21 to 34	From Chapter 21 to 30.
Hindoo Law.....	Smroothi Chundriki.....	From page 26 to 70.....	The whole.
	4th Class, Lower Rank.		
Grammar.....	Nunnool...	Vooyereethoo poonareal Mayeethoo poonareal	Vooyereethoo poonareal Mayeethoo poonareal.

Subjects.	Books.	Portions read during the year.	Portions for examination
Poetry	Theeroo Kural	From Chapter 21 to 30	From Chapter 21 to 28.
Hindoo Law	Smroothi Chundriki	From page 26 to 70	From page 26 to 50.
	3d Class.		
Grammar	Catechism of Tamul Grammar	From page 87 to 160	From page 87 to 130.
Fables and Stories	Robertson's Selections	From page 51 to 150	From page 51 to 100.
	2d Class.		
Grammar	Abridgment of Grammar	From page 15 to the end of the book	From page 15 to 58.
Moral Sentences	Nitisarayvakiam	From page 27 to 80	From page 27 to 70.
	1st Class.		
Grammar	Abridgment of Grammar	From page 7 to 41	From page 7 to 30.
Fables	Cadamanjari	The whole commencing from page 38	From page 38 to 70.
	Telugoo—4th Class.		
Grammar	Gooroomoorty's Grammar	The whole	The whole.
Poetry	Harischandra	From the 6th to 60th page.	The whole.
Fables	A Telugoo Translation of Arabian Nights Entertainments by Ramakistna Sastry	The whole of the 1st vol.	The whole.
	Morris' Selections	Eleven Revenue Letters	The whole.
	3d Class.		
Grammar	Gooroomoortee Sastree's Telugoo Grammar	The whole generally	The last two chapters, viz.: Sumasa Prakaranum kreya Prakaranum.
Tales	Punchatuntree	The whole	3 chapters from p. 59 to the end.
Official papers	Morris' Selections	All the Revenue Letters from page 109 to page 136	The whole.
	2d Class.		
Grammar	Gooroomoortee Sastree's Telugoo Grammar	From the beginning to page 47	The whole.
Tales	Punchatuntree	From the beginning to page 58	The whole.
Official papers	Morris' Selections	All the Revenue Letters	
	1st Class.		
Balasiksha	Balasiksha	From the beginning to the 83d page with the exception of the rules given in the beginning	From page 72 to 83 with explanation.
Tales	Vikramarka	From the beginning to the end	From the beginning to the 38th page.

Subjects.	Books.	Portions read during the year.	Portions for examination.
	Mahratta—4th Class.		
History....	Mahratta Abridgment of Elphinstone's History of India.....	The whole	The whole.
Grammar	Balavyacaranum	The whole...	The whole.
Natural Theology	Youth's book on Natural Theology	Chapters 4—7.....	The whole.
	3d Class.		
Moral Fables ..	Æsop's Fables	Fables 1—50.....	The whole.
Grammar.....	Balavyacaranum.....	The whole.....	The whole.
	2d Class.		
History	Catechism of Mahratta History	The whole.....	Pages 18—40.
Moral Fables...	Jagathyjothee	The whole.....	
	1st Class.		
Spelling.....	Lepidara.....	The whole...	The whole.

N B. The senior scholars were exercised in translating from English into the Vernaculars, and vice versâ, on Wednesdays and Saturdays.

*Questions proposed to the Scholars of the Upper Rank of the Fourth Class.**

Smyth's Lectures.

1. What does Smyth propose to effect in his course of Lectures on History ; and how does he intend to carry out that object ?

2. Give a concise history of Mahomet ; and account for the success of the creed which he published.

3. Who was Law ? Give a short account of the South Sea Scheme, and the Mississippi Scheme.

4. Who was Pulteney ? What object did he propose to himself in the formation of a new Ministry ? Was he successful ? Show why such an object as his was impracticable.

5. Who have been the principal writers concerning the Rebellion of 1745 ? Give a brief account of that event.

6. State what strikes you as remarkable in the character and power of the Highlanders in that struggle.

7. State the principle of Lord Bute carried out through the reign of George the 3d ; and show how that principle was erroneous

8 What led to the American war ? State the principal arguments of those for and against taxing America.

9. What end should the Mother Country keep constantly in view with respect to her colonies ? How should she prepare for the dissolution of the connection between herself and her colonies ?

Indian History.

1. When and where did Baber overthrow Ibraheem Lodi ?

2. Give a short sketch of the unfortunate career of Humaioon.

N B. The scholars of this Rank were examined in all the subjects mentioned in the "Scheme of Studies," but the questions and answers in the more elementary subjects are omitted for the sake of brevity

3. What effect had Akber's heroic exploits on the minds of his enemies ?

4. Mention the nature and aim of the Ayeen Akberry ; and give the name of Akber's celebrated vizier.

5. When Captain Hawkins was sent out to India by the English E. I. Company, to open a commercial intercourse with the Mogul's dominions, who were the Europeans that endeavoured to degrade him and his nation in the eyes of the Padishah ?

6. In what terms does Sir T. Roe speak of the Mogul Government and Court under Jehangire ?

7. Sketch the character of Aurungzebe.

8 Were the omrahs at Delhi of one race ?

9. What Deccanee kingdoms were subjugated by Aurungzebe ?

10. Mention the origin of the Sikhs. What change did Gooroo Govind introduce in the sect ?

11. State what you know regarding the Syed brothers, Abdoolla and Hussein.

12. How did Nadir Shah's invasion permanently affect the Mogul empire ?

13. By whom was the first real French East India Company established ?

14. Describe the aims of Dupleix

15. What object did Clive propose to himself in making an attack on Arcot ?

16. Give a short account of the battle of Plassey.

17. Describe briefly the way in which Hyder made himself master of Mysore.

18. Give the principal articles of the treaty concluded between Tippoo Sultan and Lord Cornwallis.

19. How did Tippoo perish ?

20 Give the dates of the following events : Alexander's invasion of India, Akber's accession, the death of Sevajee, the invasion of India by Nadir, the capture of Pondicherry by Coote, the battle of Plassey, and the death of Tippoo Sultan.

Shakspeare's Richard III.

1. What is the object of the poet in this play?

2. Give a brief outline of the plot.

3. Give the characters of Richard III., Clarence, Edward IV., Margaret, Henry VII.

4. Has Shakspeare truly followed History? If not, state in what particulars; and show what was his probable object in departing from historical fact in such instances as you may remember.

5. "Your fire new stamp of honor is scarce current."

From what is this metaphor taken? Explain the meaning of the line in intelligible prose.

"Your aiery buildeth in our aiery's nest."

Explain this—to what does Margaret allude in this line?

"He is franked up to fatting for his pains."

Give the meaning of this line.

Explain the following lines:

"Short summers lightly have a forward spring."
"Tell him his fears are shallow, wanting instance."
"Make haste, the hour of death is expiate."
"A dire induction am I witness to."
"And every hour more competitors
Flock to the rebels."

6. Paraphrase the following, (Act 1, Scene 4.)

"Sorrow breaks seasons and reposing hours,
Makes the night morning, and the noon-tide night.
Princes have but their titles for their glories,
An outward honour for an inward toil;
And for unfelt imaginations
They often feel a world of restless cares;
So that between their titles and low name
There's nothing differs but the outward fame."

7. Paraphrase the following, (Act 2, Scene 2.)

Duchess:

"Ah! so much interest had I in thy sorrow,
As I had title in thy noble husband.

I have bewept a worthy husband's death,
And lived by looking on his images :
But now two mirrors of his princely semblance
Are cracked in pieces by malignant death ;
And I for comfort have but one false glass,
That grieves me when I see my shame in him.

8. Explain or correct the following, (Act 3, Scene 1)

Gloucester :

" Thus like the formal Vice, Iniquity,
I moralize two meanings in one word."

9. " And flaky darkness breaks within the East."

What is meant by the epithet, " flaky ?"

" My foreward shall be drawn out all in length."

What is the meaning of my " foreward ?"

" Whose puissance on either side
Shall be well winged with our chiefest horse."

Explain this—and also,

" The king enacts more wonders than a man,
Daring an opposite to every danger."

Do you know any other reading of this passage .

10. Make any remarks that strike you respecting this play.

Political Economy

1. What is the subject-matter of Political Economy; and in what sense is it a science, and in what an art ?

2. Trace shortly the progress from a savage state to the establishment of social order, and a fixed Government in a community.

3. Define " wealth"—and show how far it is essential for anything constituting " wealth," to be an article of commerce.

4. How does " property" arise ?

5. Prove the general utility of individual property in land.

6. Can you show from History that insecurity of property in a country causes its people to become few and poor ? Mention instances.

7. Is Barter necessary to the progress of civilisation and industry ? And why ?

8 Does labour produce wealth? or must it have other and what aids to do so?

9 What do you understand by "Capital?"

10. Give instances of the difference between "*fixed*" and "*circulating*" capital.

11. State shortly the argument to prove that machinery is not on the whole injurious to the labourer.

12. Is it true that the poor do not suffer from the enclosure of lands previously waste or common? If so, why?

13 State clearly what is "Value" and what is "Price."

Optics

1. Taking u to be the distance of a radiant from the centre of a concave mirror, v the distance of the corresponding focus from the same point, and r the radius of the mirror, prove that

$$\frac{1}{v}+\frac{1}{u}=\frac{2}{r}.$$

2. Enunciate the law of refraction. When is it impossible for a ray of light to pass from a denser into a rarer medium?

3. Write down the formula for refraction through a lens, taking care to explain the different algebraic quantities introduced into the formula.

4. Explain the astronomical telescope in its simplest construction, and illustrate your remarks with a figure. Find also the magnifying power and field of view.

5. How do we correct the chromatic aberrations of the object-glass and eye-glass of the simple astronomical telescope?

6. A convex lens has a focal length of one inch; what is its magnifying power to a man whose distance of distinct vision is 8 inches?

7 Enunciate and prove the principle on which Hadley's sextant is based Also mention the use of that instrument.

8. What is the cause of the ordinary or primary rainbow? Account for the order of the colours.

9 The focal length of a convex lens is one foot, and an object 3 inches broad is placed on the axis of the lens, at a distance of 1 foot 4 inches from its centre, where will the image be formed, and what will be its breadth?

10 Explain the difference between a reflecting and a refracting telescope. What led Newton to turn his attention to the construction of the former?

Spherical Trigonometry and Mechanics.

1 Prove that polar triangles are also supplemental.

2. Taking for granted that cos. a = cos. b cos. c + sin. b sin. c cos A, prove that

$$\text{Cos. } a = \frac{\text{Cos A} + \text{cos B cos C}}{\text{Sin. B sin. C.}}$$

3. Prove any one of Napier's analogies, and explain its application.

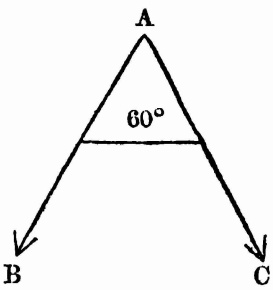
4. Enunciate Napier's rules, and explain their use

5. Are any formulæ in plane Trigonometry analogous to those given in the second question? If so, write them down.

6 Explain the nature of the leverage in the action of an oar of a boat.

7. Find the ratio between the power and weight in the Wheel and Axle.

8. A B and A C are the directions of two forces, the angle B A C being 60°. Supposing the force in A B to be 100 lbs., and that in A C to be 30 lbs., find the magnitude and direction of the resultant.



9. A ball weighing 8 lbs., and moving with a velocity of 9 feet a second, impinges on another ball which weighs 12 lbs, and is at rest. Find the effects of the impact, supposing both the balls to be perfectly elastic.

10 What is meant by saying that the accelerating force of gravity at the earth's surface is 32 feet?

11. A stone is thrown vertically upwards with a velocity of three hundred feet a second; how high will it rise, and when will it begin to descend?

Questions proposed to the Scholars of the Lower Rank of the Fourth Class.

Russell's Modern Europe.

1. What circumstances co-operated in undermining the Roman Empire in the West?

2. Explain the nature, advantages, and evils of the Feudal system.

3. Who was the last of the Visigothic Kings of Spain? Give the name and date of the battle in which he is believed to have fallen.

4. What was the exarchate of Ravenna?

5. What was the Wittena-Gemot?

6 Mention what you know regarding the principal Abasside Khalifs.

7. What great changes occurred in France and Spain about the time of Henry VII.?

8. Describe the expedition of Charles VIII. of France into Italy.

9. How did Ferdinand of Arragon make himself master of Naples?

10. Give an outline of the constitution of Venice. Also mention the object of the "league of Cambray."

11 Mention as many particulars as you can regarding Alphonso d' Albuquerque.

12. Sketch briefly the careers of Hernan Cortez and Francis Pizarro.

13. What was the result of the battle of Pavia?

14 What part in the Reformation was played by Maurice of Saxony?

15. Name the several territories possessed by Charles V. of Germany.

16. Give the dates of the following events.

The subversion of the Western Empire by Odoacer, the battle of Tours, the accession of Henry VII., the formation of the league of Cambray, the discovery of the West Indies, the diet of Worms, and the abdication of Charles V.

Poetry—Selections from Milton and Shakspeare.

1. Describe the nature and aim of Milton's L' Allegro and Il Penseroso.

2. What does the poet mean by calling Euphrosyne the daughter of Venus and Bacchus?

3. Explain the following passages and phrases:

" From his watch-tower in the skies."
" Scatters the rear of darkness thin."
" The cynosure of neighbouring eyes."
" Russet lawns, and fallows grey."
" Fairy Mab the junkets ate."
" Weeds of peace."
" If Johnson's learned sock be on,
Or sweetest Shakspeare, Fancy's child,
Warble his native woodnotes wild."
" Soft Lydian airs,
Married to immortal verse."
" Sable stole of Cyprus lawn."
" Forget thyself to marble."
" Whose power hath a true consent
With planet or with element."
" Hide me from day's garish eye."
" And storied windows, richly dight,
Casting a dim, religious light."

4. What parentage does Milton ascribe to melancholy?

5. Who was the poet " that left half told
The story of Cambuscan bold?"

6. Paraphrase the following passages:

" These kind of knaves I know, which in this plainness
Harbour more craft, and more corrupter ends,
Than twenty silly ducking observants
That stretch their duties nicely."

"Take physic, pomp :
Expose thyself to feel what wretches feel ;
That thou mayest shake the superflux to them,
And show the heavens more just."
"The Gods are just, and of our pleasant vices
Make instruments to scourge us."

7 On what grounds does Cæsar feel uneasy regarding Cassius?

8. Explain the following passages :

"Lowliness is young ambition's ladder."
"Cowards die many times before their deaths."
"My heart laments that virtue cannot live
Out of the teeth of emulation."

9. Describe the general character of Antony's funeral oration over the corpse of Cæsar.

Plane Trigonometry.

1. Trace the variations in the magnitudes of the secant, and versed-sine, as the angle increases from 0° to 360°.

2. Show by means of a geometrical construction that cos. (A + B) = cos. A cos. B—sin. A sin. B, A being greater than 90°, and (A + B) less than 180°.

3. Prove that in general $\triangle$ tan. A = sec^2 A tan. $\triangle$ A very nearly. Also state the cases in which the equation does not hold good.

4. Explain how we obtain the formulæ for finding the functions of the angles of a triangle from the sides.

5. In an oblique angled triangle A B C, $a = 562^{\text{feet}}$, $b = 320^{\text{feet}}$, and $c = 128° \ 4'$; find A and B, without previously ascertaining the value of c.

$$\left\{\begin{array}{ll} l\ 2{\cdot}42 = {\cdot}3838154 & \text{L tan. } 25° \ 58' = 9{\cdot}6875402 \\ l\ 8{\cdot}82 = {\cdot}9454686 & \text{L tan. } 7° \ 36' \ 40'' = 9{\cdot}1258870 \end{array}\right\}$$

6. Show how to solve the above problem by means of right angled triangles.

7. A side of a regular dodecagon is 12 feet ; find its area, and the radius of an inscribed circle.

8. Assuming De Moivre's theorem when the index is a positive integer, prove that it holds when the index is a negative integer.

9. Sketch the method whereby the sine of one minute is found: and show how the sines of angles beyond 60° may be determined by applying the operation of addition to the sines of angles within 60°.

10. What principle is used in finding the tabular logarithmic functions of angles consisting of degrees, minutes, and seconds, from those of angles expressed solely in degrees and minutes?

The Steam Engine.

1. Point out the advantages of the Single-acting Steam-Engine compared with the Atmospheric Engine.

2. Why was not the Single-acting Engine adapted to move machinery, and what was the first great step towards the application of Steam power to manufactures?

3. Explain as clearly as you can the mechanism of the parallel motion.

4. Given that the segments of the link are inversely proportioned to the radii of the beam, deduce from thence an expression for finding the length of the radius rod. Also find its numerical value, supposing the radius of the beam to be 8 feet, and the parallel bar to be $2\frac{1}{2}$ feet.

5. Explain the expansive principle of Steam. What advantage results from the application of this principle, independently of the saving of power which is obtained?

6. Explain the use and action of the excentric.

7. In what positions of the crank is the effect of the connecting rod upon it greatest, and when least: and in what part of the stroke of the piston is the operation of the fly-wheel most essential, and why?

8. To what temperature is it necessary to cool down the condenser, in order to secure the full efficiency of the steam acting upon the piston; and what quantity of water at the temperature of 55° will be requisite to effect such condensation?

9. What is the latent heat of steam at 212°? Is it the same or different in steam generated at different temperatures and under different pressures? How does it vary with respect to heat of temperature, and what remarkable conclusion do you deduce from the fact?

10. The diameter of the cylinder of an Engine is 36 inches, the length of the stroke $5\frac{1}{2}$ feet, the number of strokes per minute is 24, and the effective pressure on the piston is 7 lbs. per square inch What is the power of the Engine?

Pneumatics.

1. Draw a diagram of an air-pump, and explain the action of the machine

2 Mention the principal properties of the atmosphere; and state the manner in which we ascertain their existence.

3. The barrel of an air-pump contains one cubic foot of space, and the capacity of a receiver attached to the instrument is equal to three cubic feet; find the densities of the air in the receiver after two, eight, and thirty-two double pumpings.

4. What is a condenser?

5. How is it that the heights of mountains are ascertained by means of a barometer?

6. Explain the construction of a thermometer. When the mercury in Fahrenheit stands at 55°, how high is the mercury in the Centigrade?

Selected Answers of the Scholars of the Upper Rank of the Fourth Class.

Smyth's Lectures.

1. The first scheme of lecture which professor Smyth proposed to deliver was to avoid giving detailed accounts. The subject of lecture was "the situation of Europe at different periods, the progress of society, of human happiness, and of the intellectual character of the species for the last fifteen centuries." He was to avoid giving the history of France or Spain or any other country separately; to avoid all particular and local histories. In short he was to give a concise account of events which by their relation affected the progress of Europe. But the extent and difficulty prevented him

from carrying this plan in execution. His next project was to select different epochs such as the dark ages, the revival of learning, the religious wars, the reformation and the power and enterprise of Louis the 14th; and to lecture upon them. But this instead of being a lecture appeared to be a history, and Smyth therefore avoided it. The last plan which he fixed upon and which he executed was to assist the readers or hearers of his lecture in reading history for themselves.

P. RUNGANADUM.

2. Mahomed, the founder of the Mahomedan religion, and a native of Mecca in Arabia, was the only son of Abdalla and Jemima a Jewish princess. He was descended from the family of Hasheim and of the tribe of Koreish who were the hereditary guardians of the principal temple of the Arabs in Mecca called the Kaaba. His parents dying while he was an infant he was taken under the care of his uncle Abu Talib who instructed him in the arts of war and commerce. At the age of 25 he was appointed a factor or agent to Cadigha a rich widow whom he shortly afterwards married; and was thus enabled to rise from obscurity to a footing of equality with the other merchants of Mecca. He was possessed of considerable eloquence and great energy of mind. The principle upon which he based his religion was, the existence of one only God and that Mahomed was his prophet. He was encouraged in this by his wife Cadigha and his youthful cousin Ali who embraced his newly established religion. But his disciples being persecuted by the Khorishites, the tribe to which he belonged, he was obliged to leave his native country and flee to Medina A. D. 622. This flight of Mohamed has been called by the Mahomedans the Hijira and it is from this period that they reckon their time. Here he had a favourable reception, and gave out that he received a mission from God by the angle Gabriel to spread his religion by means of the sword. No sooner was this known than several buckled on their swords to accomplish the object which Mahomed had in view viz. the conversion of the whole world. The successors of Mahomed were called the Kalifs and his dominion under them rapidly spread not only in Arabia, but Spain, Syria Egypt &c. The success of the creed which Mahomed published was altogether owing to the superstition which

at that time prevailed amongst the people of Arabia. They were ready to believe any thing that was told them, and Mahomed taking advantage of this, held out hopes to them, of glory in this life and eternal happiness in the world to come. This was a sufficient stimulus to bring them into action, the result of which was the success of the Mahomedan religion, as is contained in the Khoran, their book of worship.

H. KERAKOOSE

3. Law was the son of a Scotch goldsmith and banker, and during the early days of his youth he imbibed the principles of banking. On the death of his father he inherited a large estate called Larriston estate, but as he gave himself up to gambling he lost his whole fortune.

He first proposed to the Government of his own country to issue paper money to the amount of the value of the lands in the kingdom; but his proposal being rejected, he offered his financial schemes to the various states in the continent. Although he was at first unsuccessful yet at last with the assistance of the regent the duke of Orleans he succeeded in getting a bank established in Paris in the year 1716. This bank was established on the common principles of issuing bank notes and reserving hard money to pay them when occasionally presented.

Law was a man of a contriving and speculating mind, and possessed great address and fine persons and consequently his bank prospered most rapidly. To this bank was added in the year 1719 a commercial company called the Mississippi company. This company enjoyed an exclusive trade to Louisiana, the farming of the taxes, and other exclusive privileges. In the year 1719 Law's bank was converted into a royal bank.

The great object of the regent in assisting Law was to enable him to lighten the financial embarrassments of the kingdom. In order to carry out this object the regent proposed to himself to coin bank notes in the royal bank and to buy with these notes all the shares of the Mississippi company; then to borrow the notes from the company on a lower rate of interest than what was paid to the state creditors and with these notes to pay off the national creditors. It was then so settled that the shares of the Mississippi company which the

regent had in his hands could bought only with the bank notes. By this means the bank notes were once more to come to the regent who was to burn them because they were issued in his own bank. By this circuitous method the regent thought of becoming a debtor to Law & Co., instead of the nation and to get the rate of interest reduced.

With a view of enabling the regent to dispose of the shares of the Missippi company Law proposed incredible dividends and thus allured the nation in a great measure to buy those shares. Such was the rage for buying and selling shares that the counting of hard money was tedious and paper money was had recourse to in a great measure. At last the sober reasoning portion of the community began to show their brethern of the impossibility of realizing the dividends promised by Law. This, with other circumstances such as the decree that the paper money should fetch only half its numerical value contributed to produce a run upon the bank and to bring about the destruction of the Missippi company. The regent therefore had about two-thirds of the shares in his hands and consequently he was liable to pay the notes that were not returned to him but were yet in the hands of the nation. These circumstances made Law to escape narrowly with his life and covered the administration of the regent with disgrace. The only advantage that the regent gained was that he had to pay fifty-three millions of levres instead of eighty for the interest of the national debt. There was a scheme broached in England called the South Sea Schemes and it differed from the Mississippi Scheme in the following respects. With the South Sea Scheme the royal bank was not connected; and in England no endeavours were made to depreciate the coin of the country by the over issue of paper money as was the case in France.

The South Sea Scheme owed its origin to Harley who proposed to constitute the national creditors into a Company and to allow them the exclusive privileges of trading to the South Seas.

The South Company that afterwards failed brought disgrace upon the nation and ruined many families might be taken as a caricature of the Scheme proposed by Harley. The South Company whose object to trade to the South Seas or the Spanish America were to pay to the Government a deouceur of seven millions for enjoying that ex-

clusive privilege. This Company proposed to become the sole creditors to the Government by buying off the national debt from the different individuals and to receive from the government a lower rate of interest than what was paid to the different national creditors and to have the whole debt made redeemable. But the Government were to allow them 5 per cent. for four years when the money would not be worth so much. With these views the projectors of the South Sea Scheme promised enormous dividends and such was the avaricious spirit of the people that almost all bought the shares in that Company with their shares in the national stock. The people became so far blind as to exchange their claims upon the Government for a thousand pound for a share of hundred pounds in that Com pany.

But when the Company failed to pay the dividends they had promised the nation began to open their eye and see their own folly.

The Mississippi Scheme of France and the South Sea Scheme of England serve to show us the folly of the Governments of both the countries and the extent to which both the French and the English were intoxicated with the strong spirit of avarice.

P. RUNGIAH.

4. Pulteney was a man of brilliant talents, clear understanding, and sound judgement. He was possessed of fluency of speech, with which he distinguished himself in the parliament. He was a vehement opposer of Sir Robert Walpole, and had always in his views the destruction of that minister. In this he was successful. After the downfall of Walpole's ministry, when he was called upon to form an administration, he thought, that he would keep up his popularity, by not taking any active part in the affairs of Government, as a supporter or as an opponent but by superintending the acts of the council, as a commoner, elevated to the rank of a peer. But in this he was quite mistaken. For the people are apt to forget their favourite if he does not continually distinguish himself before them, either by supporting the acts of the ministry, or opposing them. When Pulteney was made Peer he had to retire from the house of commons, which is the great theatre for men of splendid talents to distinguish themselves, and to become the favourites of the people ; consequently, he had no opportunity of rendering himself eminent.

Moreover he resolved not to mingle himself with the affairs of Government, which resolution kept him altogether out of the sight of the people. There it is impossible for Pulteney to maintain his popularity when he was not concerned in the acts of the ministry.

B. KISTNASAWMY.

VIII. The measure that tended to bring about the American War and eventually the establishment of the American republic was an attempt of the mother country to tax, her colonies in North America. Mr George Granville who introduced the Stamp act, had it passed into a law in 1765. This was repealed by the Rockingham administration but a declaratory bill was introduced asserting the right of great Britain to tax America. This together with some other measures which the British Parliament enacted viz. the shutting up of the port of Boston, the altering the constitution of Massuchusets, and removing to England such of the Americans as are rebellious and ungrateful to stand their trials, cemented the Americans in their union of defence. The first blood that was drawn was in the affair at Lexington in 1775 and after the defeat at Bunker's Hill in the same year, the affairs of the Americans were placed under the hands of Washington, the great character of the 19th Century. It is to Washington a native of Virginia, that America owes her strength, her national importance and her Independance.

The principal arguments for taxing America were that the English had assisted the Americans in the seven years war against the French, and consequently they were thought ungrateful when they resisted the attempt of the mother country in taxing them. They were also considered rebellious for the sovereignty was considered to be in the parent state and in the rights of sovereignty were included the right of taxation, and consequently they were subject to the authority of the British Parliament. The argument that was employed against taxing America was that by the British constitution no taxes could be imposed upon the people, in a parliament where they were not represented, and consequently as the Americans were not represented in the British Parliament they would not easily submit to be taxed by a parliament to which they sent no representatives.

H. KERAKOOSE.

Indian History.

1. Baber defeated Ibrahim Lodi at Paniput in the year 1525.

2. Humaioon had entrusted the command of his army to his brothers Camiran and Hindal who taking advantage of his excessive lenity, laid claims to vast power. Shere Khan a patan chief who still held power in Bengal, availed himself of this disturbance, and rendered himself independent. Humaioon marched against him but was entirely defeated and obliged to flee. He marched through the desert and entered the court of Maaldeo, who at first promised to be faithful ; but Humaioon learning that this base chief wanted to betray him, fled to the Court of Sha Tamasp, king of Persia. In his passage through the desert, he was informed of the birth of Akber at Omerkote but he was rendered very sorrowful when he heard that his treacherous brother Camiran had taken possession of him. Sha Tamasp gave him a body of 10,000 soldiers to enable him to recover his lost authority. With this aid he marched against Cabul, but in consequence of his brothers, he failed in his attempt ; he then took Candahar and directed his course to Cabul. There his brother Camiran had placed Akber on the walls, bound to a funeral pile and threatened to put him to death, if the father should attack Cabul ; but Humaioon slighted his threats, marched upon Cabul and compelled his brother to fly from the kingdom. He again ascended the throne in 1555, and in the following year while descending from the marble stairs of the palace, he fell down and was so bruised, that he died shortly after.

5. The Portuguese were the Europeans who endeavoured to degrade Captain Hawkins and his nation in the eyes of the Padashah, when he was sent out by the English East India Company to open a commercial intercourse with the Mogul's dominions.

O Saumoo Rao.

7. Aurungzebe was one of the greatest and most talented sovereigns that ever swayed the sceptre of India. He was possessed of strong intellect, and a highly penetrating genius that enabled to study human nature to advantage. He was highly politic, and was able to understand well the the nature of the circumstances under which

he was placed and the character of the persons with whom he came in contact, and use them to his advantage. He was very energetic active, and temperate. He was a jealous moslem, and used the religious zeal of himself and of his soldiers to contribute to his aggrandizement. He was unscrupulous, and could do anything however dishonest it might be, provided it answered his purpose. He was a great warrior, and developed his military talents in the Deckan. His ambition was boundless. As a monarch, he deserves high praise; he governed his subject with profound wisdom, and with great energy. He administered justice impartially, and established peace and order among his subjects. His religious zeal urged him on to persecute the Hindoos who formed the larger portion of his subjects, and on this account, as a sovereign, he is highly culpable. Although he raised himself to the throne by his undutiful act towards his father, yet he may be called a dutiful son in as much as he treated his father with respect afterwards, and in his last letter to his son expressed his remorse for his guilt towards his father.

T. VENCATACHARRY.

11. Abdoolla and Hoossein were two brothers who after the breaking up of the Empire on the death of Aurungzebe, came into power, and succeeded in placing one emperor after the other upon the throne of India. But after the accession of Mahomed Shah who was indebted to the Syed brothers for the throne, the latter were slighted and treated most disrespectfully and were shortly after dispatched by the order of the Emperor.

H. KERAKOOSE.

12. Nadir's invasion of India exposed the weakness of the Mogul empire to the world, and paved the way for subsequent invasions of the Mogul dominions by the Afghans, the Mahrattas and various petty tribes. We may even go so far as to assert that it was one of the main causes that led to the destruction of the Mogul Empire in India.

15. The object which Clive proposed to himself in attacking Arcot, was to attract the attention of Chunda Saheb and his allies to that town, and so make a diversion in favour of Trichinopoly which was then closely besiged by those confederates.

T. VENCATACHARRY.

16. The battle of Plassey fought in June 1757 acquired to the English the undisputed sway over the provinces of Bengal, Bahar and Orissa. It was fought by the English on the one side and by Suraja Dowlah on the other. The Indians first commenced the attack, but it was repulsed by the steady fire kept up by the English. It was so languidly fought that Colonel Clive is said to have fallen asleep during the action, which some authors ascribe to the fatigues he suffered. The army of Jaffier made a doubtful movement and when it was found entirely to separate from that of Suraja, the English by a steady attack, carried the day and compelled Suraja Dowlah to fly from the field of battle.

C. SAMA ROW.

20. Alexander's invasion of India,.....B.C. 327.
Akbar's accession,.....A.D. 1556.
Death of Sevajee,.....A.D. 1680.
Invasion of India by Nadir,.....A.D. 1739.
Capture of Pondicherry by Coote,....A.D. 1761.
Battle of Plassey,.....A.D. 1757.
Death of Tippoo Sultan,.....A.D. 1799.

H. KERAKOOSE.

Shakspeare's Richard III.

1. The object of the poet in this play is to depict the character of intellect without morality, to show the world the deformities of vice and the transient nature of the success with which it glories, and above all to explain the nature of retributive justice, which is employed by the Deity to bind the world to the observance of strict morality.

T. VENCATACHARRY.

III. If we view the character of Richard as "the bold bad man of Shakespear's drama," we will find him represented as a monster of the most atrocious nature, possessing no good qualities, save courage. His ruling passion was ambition for the gratification of which, he trampled upon every law both human and divine. In the wars between the Roses, the conspicuous part he played in favour of his brother Edward, seems not to be the result of any fraternal affection,

but that of a guilty desire of usurping the throne from his brother or his descendants after the right of his family to it has been fully established, and which he expresses in the following line.

"I stay not for love of Edward but the crown."

He was deformed in his figure, and had one of his shoulders higher up than the other. He was short, had a hump on his back, and one of his arms whithered, and was quite unequal to his brother in point of beauty. All these defects in his person proving as bars to his associating himself with the members of any gay assembly, and partaking of their pleasures seems to have excited him to commit all those atrocious cruelties, which disgrace humanity. He in his opening sololiquy says

"Since I cannot prove a lover
To entertain these fair well spoken days,
I am determined to prove a villain."

He was cruel in the extreme, and had neither the softer feelings of humanity, nor compassion on his fellows. He was a treacherous brother, an unkind husband, a faithless friend, and an unduteous son. He like Aurungzebe of India was a great master of dissimulation, and when he was bent upon concealing any thing, it was impossible for any, even for those such as Buckingham and others, who considered him to be their intimate friend, to sound his mind. He had great skill in clothing his treacherous designs and acts with fair appearances, and appearing to the public as a pious, innocent, and a well thinking man; and which he expresses in the following lines.

"Thus I clothe my naked villany
Will old odd ends, stolen forth of holy writ
And I seem a saint, while I play the devil."

If he harboured any evil design towards a man or wished to kill him he would act friendly to him until he has accomplished his end.

"*Glos.*—I smile and while I smile I murder."

His character is pretty correctly described by his mother in the following lines.

"Tetchy and wayward was thy infancy
Thy school-days frightful, desperate, wild and furious

Thy prime of manhood daring, bold and venturous,
And thy age confirmed, subtle sly and treacherous,
More mild, yet more harmful, kind in hatred."

He was not freed from superstition, which hung over the English at that time, and which he shows in the battle field at Bosworth.

He was most consummate general of his age, and possessed considerable talents. The defeat he suffered at bosworth-field could not be attributed to any want of military skill on his part, but to the desertion of his followers, who adhered to him only through fear, but not through affection.

There are some good qualities, which Shakespeare avoided to bring into his play. He was a kind father to his son, who was made prince of Wales by parliament, but died soon after He made, after his accession, several salutary laws, for the benefit of the people, and some historians are of opinion, that he would have proved one of the ablest monarchs had he lived.

Clarence was a credulous man, and had no fixed principles. He, though once deserted Edward IV , was a kind brother, an affectionate father, and a fond husband. He placed implicit reliance on the words of his brother Gloster, through whose machinations, he is said to have been murdered, and thus ruined himself. He was eloquent, and could engage the affections of his audience on his side, which is expressed by Gloster, when he send the murders to the Tower.

———"He is well spoken."

Though he was guilty of some murders and desertions, yet he had sense enough to repent for his sins.

Edward IV. was a brave warrior. He was beautiful and well proportioned, and entirely gave himself up to luxury and debauchery. He was whimsical, and confining himself always to the hall of his mistresses, allowed the government to be conducted by the kinsmen of Elizabeth, his wife He was possessed of considerable talents, but was improvident and deferred every thing to the last. He was a duteous son, and a kind parent.

Margaret was a woman of shining parts. She was possessed of the bravery of a hero, the talents of a general, and the wisdom and experience of a councillor in the cabinet.

B. KISTNASAWMY.

4. Shakspeare in writing this play has not strictly adhered to history and his probable object in departing from historical fact is to expose the character of Richard III. in the worst possible light. Some of the instances are the following. In the play Henry VIth death is made immediately to follow the battle of Tewkesbury and the death of Clarence immediately that of Henry and what is worse they are supposed to be murdered by the order of Richard. Richard at the time of Edward IVth's death was in the marshes of Scotland whereas in the play he is represented in London. Richard is represented as devoid of all moral feelings and no mention is made of the affection which he showed to his son Richard and of his patronizing learning. In the play Clarence's wife is made to survive her husband for Clarence says to Brackenbury "O spare my guiltless wife," this is not true, for history informs us that the wife of Clarence died long before his imprisonment.

6. Sorrow confounds the order of the seasons, and does not allow persons who are affected by it to rest in ease and quiet. It also changes the night into morning and the morning into night. The recompence which princes receive in return for the honour that they have achieved is the enjoyment of a mere title, which is as it were a show in the eyes of the public, for real miseries. And for unsubstantial and visionary gains they often undergo great troubles, so that their titles give them no pleasure and the only difference between their titles and low name is the reputation that they have in men's mouths.

8. Shakspeare here has a reference to the old stages when Vice was introduced as a buffoon—and the meaning of the passage is that like the Vice Iniquity I play upon one word and make it bear two meanings.

H. KERAKOOSE.

Political Economy.

1. Political Economy treats of the nature, the production, the distribution and the consumption of wealth; the causes which tend to its increase or decrease; and the influence which they exercise over the happiness or misery of a nation. Its whole business is, in fact, to

investigate the various causes that have co-operated to enrich and civilize a nation.

P. VIZIARUNGUM.

2. Men in a savage state are little better than brutes. They are obliged to wander over a large extent of land in order to procure their subsistence. They live by hunting and fishing. They are frequently subject to dearths and famines. They are torpid and indolent; and it is only when they are goaded by hunger that they go a hunting. In this stage, men often kill their old parents, and their children from motives of pity. Population, in the savage state, is very scanty. In the second stage of civilization, men live by tending cattle. They subsist upon the milk and flesh which they get from their flocks and herds. In this stage men are not obliged to wander over so large an extent of territory as they did in the former stage; their means of subsistence is brought within a narrower limit. Property is introduced by their coming in possession of cattle. This stage is called pastoral.

The third stage of civilization agricultural. In this, men live by cultivating the grounds; a small tract of land becomes capable of maintaining a larger relative number of people. Property is introduced in a larger scale than in the former stage. In order to secure it laws are established. A regular form of government, monarchical or republican is brought into existence and improved upon in regular gradation. Peace and order being established on a firm basis, relations among individuals multiply; and social order comes into existence.

6. In Egypt and Syria, property being now insecure, a greater part of the lands are left uncultivated. The people in general are very poor, and few in number. These countries were in a highly flourishing and civilized state at one time. The countries around the site of Carthage were famous for the growing of mulberry trees; now those parts are rendered no more than deserts. Thus by various instances, we may show that men are impoverished, and population diminishes rapidly, in countries where property is insecure.

T. VENCATACHARRY.

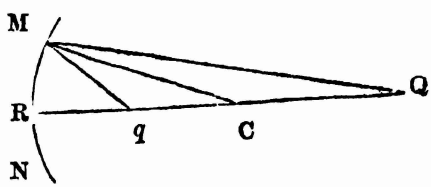
7. When men are obliged to make every thing themselves, it is very plain that they will not make any single thing well; they will not, in short, introduce any improvement whatever in their condition. If, on the other hand, barter exists, that is if one man confines the whole of his attention to any particular manufacture; each man will try to introduce improvements in his own branch, and being confined to one avocation, his thoughts are well developed; and any change which he introduces will become spread throughout the whole of his country.

P. VIZIARUNGUM.

12. The poor do not suffer from the enclosure of lands; on the contrary they are considerably advantaged by it; for when the lands are enclosed and brought under cultivation, they are rendered highly productive. A regular addition being made to the aggregate produce of the country, its wealth is increased; and the poor share the benefit of the cheapness of food.

T. VENCATACHARRY.

Optics.



1. Let M N be the given concave mirror and R Q its axis: let Q be the radiant which sends out rays to the mirror and C the centre of the sphere of which the mirror forms a part.

Let Q send a ray Q M to the mirror; draw the normal C M and a right line M q making an angle with M C equal to the $\angle$ C M Q according to the law, that the angle of Reflection is equal to the angle of incidence. Then q is the focus.

By the question $QR = u$; $CR = r$; $qR = v$

The $\angle QMC = \angle CMq$ by the law of Reflection $\therefore$ $QM : Mq :: QC : cq$.

We may suppose QM to be equal QR and $Mq = Rq$.

$$\therefore QR : Rq :: QC : Cq$$

That is $\quad u : v :: u - r : r - v$

$$\therefore \quad \frac{v}{u} = \frac{r-v}{u-r}$$

i. e $\quad vu - vr = ur - uv$

Dividing both sides by vur we get

$$\frac{1}{r} - \frac{1}{u} = \frac{1}{v} - \frac{1}{r}$$

Therefore $\quad \frac{1}{r} + \frac{1}{r} = \frac{1}{v} + \frac{1}{u}$.

$$\frac{2}{r} = \frac{1}{v} + \frac{1}{u}$$

C. SAMOO RAO

3. The formula for a lens is

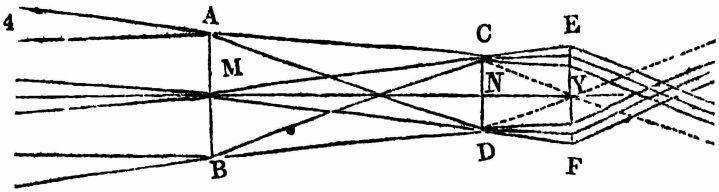
$$\frac{1}{v} - \frac{1}{u} = \frac{1}{f}$$

Here f is the distance of the principal focus or focus for parallel rays from the centre of the lens; u is the distance of a point from which a ray falls upon the lens measured from the centre of glass along its axis; v is the distance of the point where the ray or its direction cuts the axis after refraction measured in a similar way.

$f = \overline{m-1}\left(\frac{1}{r} - \frac{1}{s}\right)$, where m is the refractive index, r and s the radii of the two surfaces of a lens respectively. For a convex r is negative.

f is positive for a concave lens, and negative for a convex one.

T. VENCATACHARRY.



The astronomical telescope in its simplest form consists of two lenses; one is called the object-glass, and the other the eye-glass. The object-glass serves to form an image of a distant object. Now if we endeavour to look at this image the rays proceed so divergently that all cannot enter the pupil of the eye, and even if some of them entered they so overlap one another upon the retina that no distinct vision is produced. To counteract this effect an eye-lens is used which is placed at the distance of its focal length from the image The divergent rays that fall upon the eye-piece are not only brought into a small space so as to enter the pupil of the eye, but are rendered parallel which serves the more to produce distinctness of vision. The magnifying power of a telescope depends upon the number of times the visual angle is greater than the angle under which we generally see the object; therefore taking the figure,

$$\text{magnifying power} = \frac{\angle CYD}{\angle CMD} \text{ here}$$

taking for granted that the tangent of twice the angle = 2 tan. $\angle$ which is allowable for very small $\angle$ we have the above quantity =

$$\frac{2 \tan CYN}{2 \tan CMN} = \frac{\frac{CN}{NY}}{\frac{CN}{NM}} = \frac{NM}{NY} = \frac{F_o}{F_e}$$

that is the focal length of the object-glass by that of eye-glass.

The field of view = the diameter of the eye-glass divided by $F_o + F_e$.

S. SOONDARUM.

6. As we approach an object, its visual angle or the angle which it subtends at our eye gets larger and larger, and consequently its

size appears to become larger and larger. Now by the assistance of a convex lens whose focal length is one inch, a man whose distance of distinct vision is 8 inches is enabled to see the object clearly at the distance of one inch; and therefore the visual angle which an object subtends at his eye when he views it with this lens is 8 times as large as that which it subtends when he views without the glass.

T. VENCATACHARRY.

9. For a negative lens $\frac{1}{v} - \frac{1}{u} = -\frac{1}{f}$

here $u = 16$ inches

$f = 12$ inches

$$\therefore \frac{1}{v} - \frac{1}{16} = -\frac{1}{12}$$

$$\frac{1}{v} = \frac{1}{16} - \frac{1}{12}$$

$$= \frac{3-4}{48}$$

$$= -\frac{1}{48}$$

$\therefore v = -48$ inches or -4 feet.

$$\frac{I}{O} = \frac{v}{u}$$

$$I = \frac{v}{u} \times O$$

here $v = -48$ inches.

$u = 16$ inches.

$O = 3$ inches.

$$\therefore I = \frac{48}{16} \times 3 \text{ inches.}$$

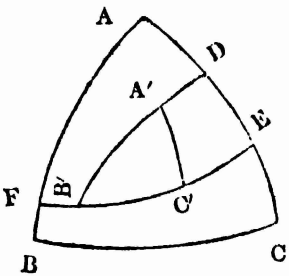
$$= -9 \text{ inches.}$$

Therefore the breadth of the image is 9 inches, the distance of the image from the lens is 4 feet and it is formed not on the same side of the lens in which the object is, *i. e.* it is formed on the other side of the lens.

P. RUNGIAH.

Spherical Trigonometry and Mechanics.

1. Let A′ B′ C′, be the polar △ and A B C the primitive we have to show that the △ A B C is supplemental.



Produce B′ A′ to cut A C in D and B′ C′ in E.

the ∠ B′ = D E

$$= A E - A D = A E - (A C - C D)$$
$$= A E + C D - A C.$$

but A E and C D are arcs of 90°.

∴ ∠ B′ = 180 — A C.

Similarly it may be shown for the other angles.

Again produce C′ B′ to F.

$$B' C' = F C' - F B'$$
$$= F C' - (F E - E B')$$
$$= F C' + E B' - F E$$

but F C′ and E B′ are arcs of 90°

$$\therefore B' C' = 180° - F E$$
$$= 180° - A.$$

3. $\text{Tan.} \frac{A + B}{2} = \frac{\text{Cos.} \frac{a-b}{2}}{\text{Cos.} \frac{a+b}{2}} \cdot \text{Cot.} \frac{1}{2} C$ is one of Napier's analogies and we have to prove this.

From $\text{Cos.}\, a = \frac{\text{Cos.}\, A + \text{Cos.}\, B\, \text{Cos.}\, C}{\text{Sin.}\, B\, \text{Sin.}\, C}$

we have

$$\text{Cos.}\, A + \text{Cos.}\, B\, \text{Cos.}\, C = \text{Sin.}\, B\, \text{Sin.}\, C\, \text{Cos.}\, a \quad (1.)$$

Similarly we get

$$\text{Cos. B} + \text{Cos. A Cos. C} = \text{Sin. A Sin. C Cos. } b \quad (2.)$$

adding 1 and 2 we have

$$(\text{Cos.A} + \text{Cos B})(1 + \text{Cos.C}) = (\text{Sin.B Cos } a + \text{Sin.A Cos.} b) + \text{Sin.C}$$

from $1 + \text{Cos. C} = 2 \text{ Cos. } \frac{1}{2} \text{ C}$

and $\text{Sin C} = 2 \text{ Sin. } \frac{1}{2} \text{ C Cos. } \frac{1}{2} \text{ C}$

we have

$$(\text{Cos. A} + \text{Cos B})\, 2 \text{ Cos.} \tfrac{1}{2} \text{ C} = (\text{Sin.B Cos } a + \text{Sin.A Cos. } b) 2 \text{Sin } \tfrac{1}{2} \text{ C Cos. } \tfrac{1}{2} \text{ C})$$

$$\therefore \text{Cos. A} + \text{Cos. B} = (\text{Sin. B Cos. } a + \text{Sin. A. Cos } b) \left(\frac{2 \text{ Sin. } \frac{1}{2} \text{ C. Cos. } \frac{1}{2} \text{ C}}{2 \text{ Cos. } \frac{1}{2} \text{ C. Cos. } \frac{1}{2} \text{ C.}}\right)$$

from $\frac{\text{Sin B}}{\text{Sin A}} = \frac{\text{Sin. } b}{\text{Sin. } a} \therefore \text{Sin. B} = \text{Sin A. } \frac{\text{Sin } b}{\text{Sin } a}$

$$\therefore \text{Cos. A} + \text{Cos B} = (\text{Sin A } \frac{\text{Sin. } b}{\text{Sin. } a} \text{ Cos. } a + \text{Sin. A Cos. } b) \text{ Tan. } \tfrac{1}{2} \text{ C.}$$

$$= \left(\frac{\text{Sin. A Sin. } b \text{ Cos. } a + \text{Sin A Cos } b \text{ Sin } a}{\text{Sin. } a}\right) \text{Tan } \tfrac{1}{2} \text{ C.}$$

$\frac{\text{Sin A}}{\text{Sin. } a}$ is common to both the terms.

$$\text{Cos. A} + \text{Cos B} = \frac{\text{Sin. A}}{\text{Sin. } a} (\text{Cos. } a \text{ Sin. } b + \text{Sin. } a \text{ Cos. } b) \text{ Tan. } \tfrac{1}{2} \text{ C.}$$

$$= \frac{\text{Sin A}}{\text{Sin. } a} (\text{Sin. } a + b). \quad \text{Tan. } \tfrac{1}{2} \text{ C.}$$

Again

$$\text{Sin. A} + \text{Sin. B} = \text{Sin. A} \left(1 + \frac{\text{Sin. B}}{\text{Sin. A}}\right)$$

$$= \text{Sin. A} \left(1 + \frac{\text{Sin } b.}{\text{Sin } a}\right)$$

$$= \text{Sin. A} \left(\frac{\text{Sin } a + \text{Sin } b}{\text{Sin } a.}\right)$$

$$= \frac{\text{Sin. A}}{\text{Sin. } a} \left(\text{Sin. } a + \text{Sin } b.\right)$$

$$\therefore \frac{\text{Sin. A} + \text{Sin B.}}{\text{Cos A} + \text{Cos. B.}} = \frac{(\text{Sin } a + \text{Sin } b)}{(\text{Sin. } a + b) \text{ Tan } \frac{1}{2} \text{ C.}}$$

$$\therefore \text{Tan. } \frac{\text{A.} + \text{B.}}{2} = \frac{\text{Cos. } \frac{1}{2} (a - b)}{\text{Cos. } \frac{1}{2} (a + b)} \text{ Cos } \tfrac{1}{2} \text{ C.}$$

The application of this formula is to find the remaining parts of an oblique $\triangle$ $\triangle$ when the two sides and the included $\angle$ are given.

H. Kerakoose.

10. If we let fall a body from an elevated place, its velocity at first is 0 ; and at the end of a second, its velocity will 32 feet a second ; that is, if gravity were to cease at the end of the first second the body will continue to move at the rate of 32 feet a second. At the end of the next second, its velocity will be 64 feet a second, at the end of the 3d second it will be 96 feet a second. Thus we see that the velocity is regularly increasing by 32 feet a second. This is what we mean by saying that the accelerating force of gravity at the earth's surface is 32 feet.

P. VIZIARUNGUM.

11. Here the impulsive force acts vertically upwards, whereas gravity acts vertically downwards.

The formula for finding the upward velocity of a body at any time is $v = u - ft$; v being the velocity of the body at any time; u, the initial velocity, and f gravity.

When the body begins to descend $v = o$

$$\therefore\ u = ft. \qquad \text{Here } u = 300\ f = 32 \text{ nearly}$$

$$\therefore\ t = \frac{300}{32} = 9\frac{3}{75} = \frac{8}{8}$$

The stone will begin to descend 9·375 seconds after it was thrown.

$s = u\,t - \frac{ft^2}{2}$ s being the space through which the body moves.

When $v = o$, $s = \frac{ft^2}{2}$

$$= \frac{32 \times \left(\frac{75}{8}\right)^2}{2} = 16 \times \left(\frac{75}{8}\right)^2$$

$$= \frac{16 \times 75 \times 75}{8 \times 8} = \frac{2 \times 75 \times 75}{8}$$

$$= \frac{75 \times 75}{4} = \frac{5625}{4} = 1406{\cdot}25$$

The stone will rise to the height of 1406 25 feet.

T. VENCATACHARRY.

Selected Answers of the Scholars of the Lower Rank of the Fourth Class.

Russell's Modern Europe.

1. 1st. The degrading influence of the Roman policy; it deprived the conquered people of the use of arms. This rendered them effeminate in a course of time, although they were easily kept in subjection by such means. They became incapable either of thinking or acting for themselves.

2d The Roman constitution carried the seeds of dissensions in its bosom. It wanted a proper counterpoise between the patricians and plebeians.

3d. The conquest of Carthage and the expulsion of the Gauls from central Italy. So long as Carthage remained independent and powerful, the whole attention of the people was turned towards it. And as long as the Gauls occupied the central Italy, the people were united by the sense of common safety. But no sooner was that rival state subdued, and the Gauls were expelled, than did the inhabitants become ungovernable.

4th Disputed successions to the empire and the exorbitant power of the Prætorian bands.

5th. The division of the Empire and the removal of the seat of government to Constantinople.

6th. The religious dissensions among the people.

7th. The circumstances in which the Barbarian invaders were placed, their love of war and liberty and their minds were not enervated by arts and commerce. They were not corrupted by any bad principles, and they deemed their sword was their right and victory is an infallible proof of justice.

T. Durmaroyen.

2. The idea of the feudal system was borrowed from that of a military establishment. The armies were cantoned in different parts of the country under their respective leaders or officers. These chiefs assembled at the head of their numerous vassals whenever occasion required. The feudal system well provided against foreign

invasion but not against the interior order and tranquillity of the state for the bond of political union was too weak and the sources of dissensions were many. The king or chief was the head of the community, he had the largest portion of the conquest and bestowed lands upon individuals on condition of rendering him military aid. The nobles or officers parcelled out their lands among inferior officers on conditions assigned before. These nobles were so many tyrants of their respective districts and they even extorted from the crown the privilege of coining money and declaring war against their private enemies.

T. TEEROOMALA RAO.

6. The Abasside Caliphs were remarkable, for the great zeal that they displayed in encouraging, knowledge, the arts and sciences, in their country. The principal of these were, Al Rashed, Al Mansour, Al Motasem, &c.

J. KERAKOOSE.

8. Charles 8th invaded Italy at the head of twenty thousand men in 1494. His object was the conquest of Naples. He claimed that kingdom through the count of Main of the second house of Anjou. This count in his last will bequeathed all his possessions to the sovereigns of France. Charles was opposed by the infamous Alexander VI. then Pope, the Venetians, and Ludovico Sforza the duke of Milan; but their endeavours proved ineffectual. Charles entered Tuscany and delivered Pisa and Sienna from the Tuscan yoke. He then proceeded to Rome and after taking it, marched against St. Angelo where the Pope had taken shelter. Now Alexander finding that it was impossible for him to defend himself against Charles, surrendered at discretion. The French king turned his arms against Naples, where its sovereign being frighted at the arms of Charles took refuge in a cloister in Sicily. Charles then took peaceable possession of Naples and there gave himself up to pleasures. In the mean time, the states of Italy perceiving that they could together oppose that power which they could not separately, formed a combination and a battle was fought at Fornova. In this the French were victorious and found an easy passage to their country.

T. DURMAROYEN.

10. The constitution of Venice underwent no alteration for a considerable period The affairs of the state were carried on with that uniform spirit ,and vigour of policy which gave it a great advantage over other countries whose views and measures changed with the administrators. The people were deprived of the use of arms and foreign mercenaries were employed. A soldier of fortune was placed at the head of them. From this circumstance it appears that Venice must have carried on wars at the greatest disadvantage. This loss is, however, counterbalanced by their commerce which rendered them opulent and powerful.

Julius II. the successor of Alexander VI. resolved to humble the Venetians because they had declined to enter into his views and refused to restore the places of which the Holy See was deprived. In consequence of this refusal, the league of Cambray was formed to ruin the republic.

T TEEROOMALA RAO.

11. Alphonso Albuquerque was an able politician and consummate general. He was possessed of extensive views. He was appointed to secure the Portuguese possessions in India. His first object was to take possession of Goa, that it might afford protection to him and serve as a rendezvous. He then attacked and wrested it from Idalcan, a Moor that had usurped it from the Subadar of Deccan. He then turned his arms against Malacca then the emporium of the East. He conquered it in 1511. He afterwards destroyed the Arabian commerce and took possession of Ormus in 1515, but his attempt on Aden was abortive. After all these achievements to his country, he experienced the ingratitude of his soveriegn and died of a broken heart.

T. DURMAROYEN.

16. The subversion of the Western Empire by Odoacer, - 476
The battle of Tours, - - - - - - - 733
The accession of Henry VII. - - - - - - 1485
The conquest of Naples byC harles VIII. - - 1496
The formation of the league of Cambray, - - - 1508
The discovery of the West Indies, - - - 1492
The diet of Worms, - - - - - - - 1520-1
The abdication of Charles V. - - - - - 1555

J. KERAKOOSE.

Poetry.

1. L'Allegro is a day piece, and Il Penseroso is a night piece. In the former, the poet describes the pleasures which the gay-minded person derives from the surrounding objects and in the latter, the pleasures which the scenes around afford to men of saturnine disposition. In the one, he mentions the pleasures amidst company, and in the other, the pleasures of retirement.

The aim of these two pieces of Milton is, to shew that the scene presented by the one, is quite contrary to the scene presented by the other.

T. TEEROOMALA RAO.

*3. By the first passage the poet alludes to the high position of the Lark in the skies; as men in the watch tower look sharp after the appearance of foreign ships in the sea so the lark is here said to be sitting in its watch tower, to wit, the skies, impatiently expecting the approach of morning. By the 2d passage the poet means, that the cock crows just before the morning and thus expels even that residue of night which the lark left behind. By the 3d he alludes to a nymph whose beauty attracted the attention of persons round her village. By the 4th he means the plains where there are grass scorched up by the sun and therefore wearing a reddishly brown colour, and fields that are for the first time ploughed and which put on a grey appearance ;|| the Fairy Mab is supposed to have eaten the sweet-meats,|| the dress worn to indicate peace. If the famous dramas of Johnson were to be played or if the productions of Shakspear be exhibited in the stage or if one were to sing his notes which are natural and capable of pleasing men. All the verses are generally sung to an instrument ;|| black robe made of cloth of Cyprus. Fix your attention upon a single object and thus become as insensible as marble. Let me not perceived by men who are engaged in the affairs of the noisy world.|| and the windows that are high and well decorated reflect a light which is dim and is capable of inspiring persons with a degree of high sentiment.

* In this answer, as also in the 6th, the writer in his haste failed to separate the different parts. To prevent confusion the mark|| is placed between contiguous but independent portions of the answer, wherever the errors in punctuation would mislead the reader.

6. I am acquainted with knaves of this description, who in this manner affecting to be straightforward, cherish in their breasts more subtle artifices and meaner objects, than twenty foolish intriguing persons who pretend to execute their functions in a fair way.

The king Lear now drops the consideration of his own misery and moralizes on the condition of the poor. He addresses those who have got much above their wants and desires them to part with their superfluities|| you, to wit the persons alluded above subject yourself to the same miseries to which the poorest persons are exposed and give away to them the abundance you have and in so doing convince the world that Gods were justified in blessing you with good fortune.

The Gods are just in so ordaining that the very vices which we commit and which appear to us pleasant should become the means of punishing us.

M. SEEVAGOOROO.

8. Ambitious men affect humility in order to gain their ends.

Men of a cowardly disposition experience the agonies of death on every occasion.

My heart cannot help lamenting to see virtuous men censured by persons actuated by envy.

T. TEEROOMALA RAO.

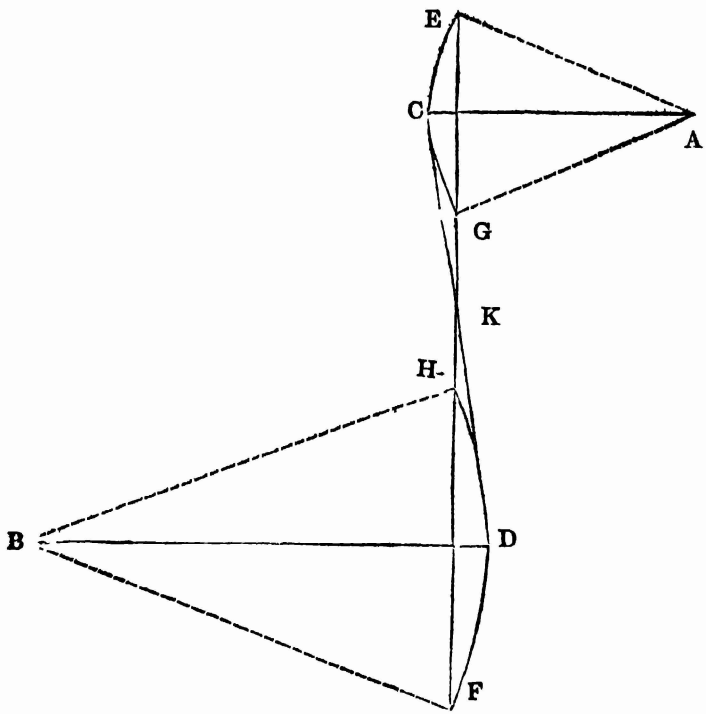
9. Antony knowing that the people were strongly biased in favour Brutus and his party does not at once declaim against them. He first explains to the people all the acts of Cæsar in their favour. He shows them his testament and at last his wounds. The people are then inflamed with great indignation against Brutus and his partisans. The prudence of Anthony consists in screwing the people gradually up to a spirit of indignation against his rivals and then gaining them over to his side.

M. SEEVAGOOROO.

The Steam Engine.

2. The single acting Engine was not adapted to move machinery on account of the motion being intermittent and not continuous. The first great step towards the application of steam power to manufactures was to introduce steam both below and above the piston in the steam cylinder.

3. One of the remarkable inventions that resulted from the fertile genius of Watt was the parallel motion. The object of this beautiful contrivance is to secure a rectilinear motion of the piston and air-pump rods attached to the working beam. Before touching upon the subject in its complicated form let us understand the mechanism in its simplest shape.

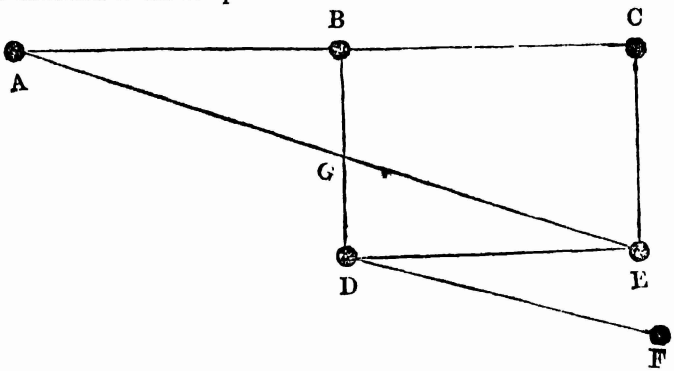


A C is a rod playing round the fixed centre A and describes the arc E C G. B D is another rod playing round another fixed centre B and describes the arc F D H. C D is the link connecting the extremities C and D of the radii A C and B D. K is a point in the link and is such that the segments of the link C K, K D are inversely proportioned to the radii A C and B D.

When A C is in the position A E, B D would be in the position of B H and the link will coincide with the vertical line E H. If the two radii are in the position A C, B D the connecting link will be in

the position C D. The radii move proportionally to the left and to the right of the vertical. Then there must be some point in the link moving in a straight line. That point is K. Again when the radii assume the position A G, B F the link will coincide will the vertical G F.

If the radii be equal it is evident that the point is in the middle of the link. Such is the principle of the parallel motion. Let us now turn our attention to the complicated form.



A is the centre of the working beam A C A B and D F are the radii playing round the centres A and F. B D is the connecting link. G is the point that moves in a right line. Now hang on a parallelogram B C E D to the beam having B C B D for its sides. Fancy A and G to be joined and produced.

Since the triangles A B G and A C E are similar the point where A G produced cuts the parallelogram has the same and similar motion to that of G except the former point moving through a greater space than the latter. Such point is E to which the piston rod is attached and the air-pump rod is fastened to G.

Note. D E is called the parallel bar and D F the radius bar. Had it not been for this invention the piston rod would describe an arc and consequently the bore of the stuffing box would give way and the air entering into the cylinder destroy the the engine. Such are the advantage and importance of the parallel motion.

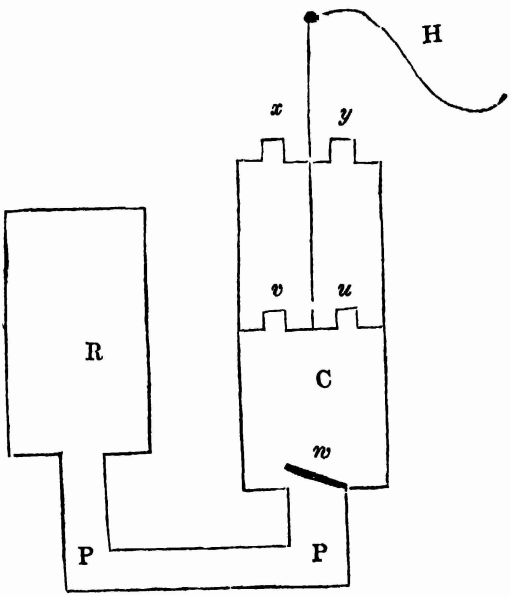
7. When the crank is at right angles to the connecting rod, then the effect of the latter upon the former is the greatest and when the former is at its dead points, then the effect is the least. The operation of the fly wheel is most essential when the piston is at the top or bottom of the cylinder for when the piston is at the top or bottom

of the cylinder the crank is at its dead points. Here the fly wheel is necessary; it by its own inertia causes the crank to escape from that critical position and thus the safety of the engine in some measure ensured. Had it not been for this fly wheel the connecting rod would expend its whole energy in either depressing or raising vertically and thus destroy the engine.

T. TEEROOMALA RAO.

Pneumatics.

1. The air-pump is an instrument by means of which we can exhaust the air from any receiver. The annexed diagram is view of the air-pump in its simplest form. R is the receiver from which we wish to exhaust the air, and P P is the pipe which opens a communication between the receiver and the cylinder C. In the the cylinder there is fitted a piston which has *v* and *u* for its valves that open upwards.



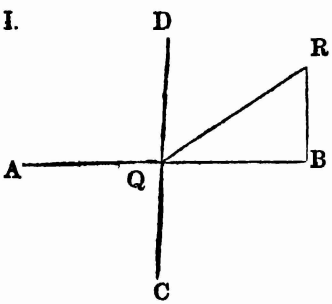
There is a valve *w* at the bottom and two *x* and *y* at the top of the cylinder, all opening upwards and H is the handle attached to the piston rod. Let us suppose that all the valves are shut and that the piston is at the bottom of the cylinder. When the piston rises, the air, by its expansive principle, passes through the pipe P P, and forces open the valve *w* there being a vacuum above it, and when the piston reaches the top, the air fills the whole cylinder, and the valve *w* closes itself by its gravity, as the air above counterbalances that below. When the piston descends, the air below it being compressed gets a greater elasticity and forces open the valves *v* and *u* and

when the piston reaches the bottom, the whole cylinder above it becomes filled with air, and the valves v and u are closed. When the piston ascends, the air above it being compressed, gets a greater a greater elasticity than that on the cylinder, and forcing the valves x and y escapes into the atmosphere. All this while, there being a vacuum below the piston, the air from the receiver expands, opens the valve w and fills the cylinder. When the piston again descends the air below it opens the valves v and u and fills the cylinder above the piston. When the piston again ascends valve w which was shut, is opened by the pressure of the air beneath, and the air follows the piston during which time the air above the piston escapes through the valves x and y for reasons stated before. Thus the operation may be continued as long as we like.

D. TEAGIAH.

Plane Trigonometry.

I.

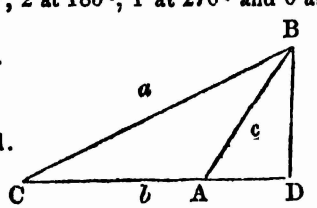


Let A B and D C be two rectangular axes and Q the point of their intersection. From Q draw a radius Q R and from R drop $\perp^r$ R B on Q B. When the $\angle$ is 0°, the base becomes equal to the radius, and therefore the secant, which is $\frac{r}{b}$ equals 1. As the $\angle$ increases, the base get less till it at last becomes 0 when the $\angle$ is 90° where the secant, which has been increasing all the while, is infinity. As the $\angle$ increases from 90° to 180°, the secant decreases and becomes 1 at 180. Again as the $\angle$ increases the secant increases till it becomes infinity at 270°, and it decreases to 1 as the $\angle$ increases from 270° to 360°.

The versed-sine, whose value depends on the Cosine, is 0 at 0°, 1 at 90°, 2 at 180°, 1 at 270° and 0 at 360°.

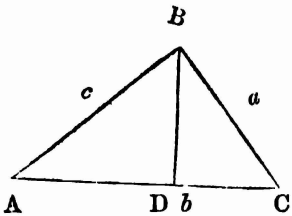
IV.

Fig. 1.



We obtain the formulæ for finding the functions of the $\angle^s$ of $\triangle$ from the sides by means of the 12th and 13th props. of the 2d Book of Euclid.

Fig. 2.



In the $\triangle$ A B C (fig. 1), $a^2 = b^2 + c^2 - 2b$. A D by the 12th prop.

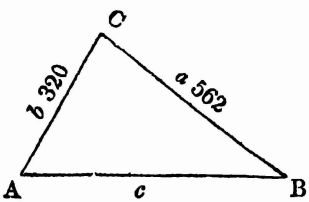
$$\text{and A D} = \text{A B. Cos. B A D}$$
$$= - \text{A B. Cos. A}$$
$$\therefore a^2 = b^2 + c^2 - 2\,b\,c. \text{ Cos. A}$$
$$\therefore \text{Cos. A} = \frac{b^2 + c^2 - a^2}{2\,b\,c}$$

Similarly in $\triangle$ B A C (fig. 2)

$$\text{Cos. A} = \frac{b^2 + c^2 - a^2}{2\,b\,c} \text{ by the 13th prop.}$$

D. Teagiah.

V.



Let A B C be the given obtuse $\angle^d$ $\triangle$, having C $= 128° 4'$, $a = 562$ feet. $b = 320$ feet. It is required to solve the $\triangle$.

$$\therefore \quad \text{Tan.}\left(\frac{\text{A} + \text{B}}{2}\right) = \text{Tan.}\left(\frac{180° - \text{C}}{2}\right)$$
$$= \text{Tan. } (25° \ 58')$$
$$\text{and Tan.}\left(\frac{\text{A} - \text{B}}{2}\right) = \frac{a - b}{a + b} \cdot \text{ tan. } 25° \ 58'$$
$$= \frac{242}{882} \cdot \text{ tan. } 25° \ 58'$$
$$= \cdot 3838154 - \cdot 9454686 + 9 \cdot 6875402.$$
$$= \bar{1} \cdot 4383468 + 9 \cdot 6875402$$
$$= 9 \cdot 1258870.$$

But $9 \cdot 1258870 = \text{L tan. } 7° \ 36' \ 40''$

$$\therefore \quad \frac{\text{A} - \text{B}}{2} = 7° \ 36' \ 40''.$$

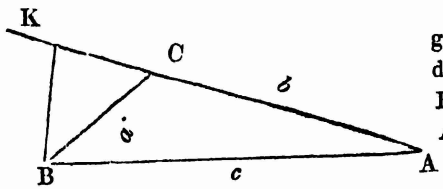
But we know $\frac{\text{A} + \text{B}}{2} = 25° \ 58'$.

$$\therefore \quad A = \frac{A+B}{2} + \frac{A-B}{2}$$
$$= 25^\circ\ 58' + 7^\circ\ 36'\ 40''.$$
$$= 33^\circ\ 34'\ 40''.$$
$$B = \frac{A+B}{2} - \frac{A-B}{2}$$
$$= 25^\circ\ 58' - 7^\circ\ 36'\ 40''.$$
$$= 18^\circ\ 21'\ 20''.$$

Now we have

$$\left.\begin{array}{l} A = 33^\circ\ 34'\ 40'' \\ B = 18^\circ\ 21'\ 20''. \\ C = 128^\circ\ 4'. \end{array}\right\} \text{Altogether } 180^\circ.$$

VI.



Let $\triangle$ A B C be the given triangle. Produce A C and drop B K perpendicular to A K.

$\therefore \angle$ B C A is given

$\therefore \angle$ K C B is known

$\therefore$ K C = Cos. K C B. C B which is known then the whole A K is known.

We also can determine B K from rt. $\angle d$ $\triangle$ K B C and B C from the large rt. $\angle$ $\triangle$ A B K.

From that we get the $\angle$ A

then also $\angle$ C B A

Thus all the parts are found.

T. Durmaroyen.

A VIII. $(\text{Cos. } \theta \pm \sqrt{-1} \text{ sin. } \theta)^m = \text{cos. } m\theta \pm \sqrt{-1} \text{ sin. } m\theta$

then $(\text{cos. } \theta \pm \sqrt{-1} \text{ sin. } \theta)^{-m} = \left(\dfrac{1}{\text{cos. } \theta \pm \sqrt{-1} \text{ sin. } \theta}\right)^m$

$$\left(\frac{1}{\text{cos. } \theta \pm \sqrt{-1} \text{ sin. } \theta}\right)^m = \left(\frac{\text{cos.}^2\theta + \text{sin}^2\theta}{\text{cos. } \theta \pm \sqrt{-1} \text{ sin. } \theta}\right)^m$$
$$= (\text{cos. } \theta \mp \sqrt{-1} \text{ sin. } \theta)m \text{ by division.}$$
$$= \text{cos. } m\theta \mp \sqrt{-1} \text{ sin. } m\theta$$
$$= \text{cos.} -m\theta \mp \sqrt{-1}\,(-\text{sin.} -m\theta)$$
$$= \text{cos.} -m\theta \pm \sqrt{-1} \text{ sin.} -m\theta.$$

D. Teagiah.

Essay written off-hand in the Examination Room.

ON THE BENEFITS RESULTING FROM THE PRESENT UNEQUAL CONDITION OF MANKIND. WHY IS SELF-EXERTION BOTH THE DUTY AND THE INTEREST OF EVERY MEMBER OF SOCIETY, WHETHER RICH OR POOR?

All men are not equally industrious; there is a regular gradation among the human species in point of industry, which serves as a clew to distinguish the character of one individual from that of another. Neither does there exist an equality among men with regard to their bodily as well as mental endowments. When we take all these variations into consideration, we plainly see that it is natural that there should be an inequality of ranks and conditions among mankind.

This diversity, far from being in any way injurious to the interests of men, highly tends to promote their progress and civilization. It is this state which is best fitted to develope the mind of man and call into play all his latent powers. It is in this state that peace, order and regularity can be effectually preserved among mankind. And above all, it is this state which appears to be natural to the human species, and which is necessary for the well being of society. We should regard it altogether theoretical to suppose that a perfect equality can exist among any nation; for such a condition is against human nature. Countries where people attempted at banishing diversity of ranks and conditions, and introducing equality and fraternity have always been observed to be oppressed by poverty and anarchy. The plans adopted for bringing about community of interest have either altogether failed or produced unsought for and injurious results. In Rome an attempt was made to introduce an equality of ranks and conditions among the people; but it proved abortive. Among the Spartan citizens the endeavour was attended with success for a time; but what advantage did it confer on the nation? it produced a community of warriors who trampled upon the liberties of the industrious peasants, that nourished them with the produce of their labour. In every point of view, equality of conditions is baneful to the interests of mankind; it chills the hearts of the industrious and irretrievably injures the cause of labour; it makes activity and energy disappear, and reduces a nation to ex-

treme poverty and distress. On the contrary, innumerable advantages are derived from the present unequal condition of mankind. This state highly promotes the progress of civilization; it stimulates industry and renders labour productive. Man is a noble creature; the various passions, emulation, love of honor, ambition, &c. which have been wisely implanted in his breast, urge him on to distinction and cause him always aspire at something superior to that which he possesses. Where there is a scope for him to shift from one condition to another, there will always be activity and energy on his part. In seeking their own interest, men of different ranks and conditions mutually benefit each other. The rich man employs his capital and feeds the poor man; and the latter in his turn, works for him, and produces as much as is spent upon him, and something more. Without the rich the poor cannot find an effective means of employing their labour, and without the poor, the rich cannot find a productive method for the employment of their capital. The poor and the rich are to each other as the different principal parts of our body are to one another.

The diversity of conditions in a nation greatly tends to call forth various human virtues, patience, humility, resignation among the poor; and liberality, generosity, compassion, charity among the rich. In all points of view, the present unequal condition is highly beneficial to mankind.

A man that ceases to be active and becomes indolent, brings misery upon himself. He exposes his body to various diseases; and his mind also sickens and dies. For the preservation of bodily health, and prevention of disorder in the mind, it is highly important, nay more, it is duty as well as interest for every man whether rich or poor that he should be active and self exerting. The object of the Deity in endowing man with reason and other faculties, and in placing him amidst such a vast creation every corner of which is capable of affording an extensive scope for research appears to be not that he may use them only in obtaining means for the pampering of his belly, but that he may employ them in answering nobler ends, in examining the various objects around him, and working a steady course to become "the interpreter of nature and her laws."

T. VENCATA CHARRY.

Report on the Written Answers in Smyth's Lectures.

The result of this examination shows an equality between S. Soondarum, Williams, and Kerakoose. I recommend the publication of the answers of the first of these boys.

I have but a very few remarks to make. It strikes me that the answers in general are inferior to those of last year; and exhibit considerable superficiality. It is to be remembered, however, that the scholars have had only 8 instead of 12 months.

The handwriting of the boys is in general very bad. Allowance is to be made for the rapidity with which they are compelled to write, but with the exception of Sam Rao, Williams, and Kerakoose, the handwriting of all the others is cramped and decidedly bad. I think this might and ought to be remedied.

JOHN BRUCE NORTON.

Report on the Written Answers in Shakspeare.

In reporting upon the answers to the Shakspeare questions, I must observe that the boys appear to be somewhat new to this sort of work. I apprehend that they have not had papers of questions on the play set them before; and they do not appear to me to have had their attention sufficiently pointed to the necessity of giving a *brief* answer to each question. Thus I find almost all the boys giving an unnecessary portion of their time to the character of Richard; in some instances this has been carried to such an extent as altogether to preclude their devoting themselves to other questions of at least equal importance.

There is a considerable improvement apparent in the paraphrasing since last year; and the boys also seem to have a fair perception of the general meaning of the particular lines picked out for them to explain—at the same time they have one and all missed the value of particular words used in those lines in an unusual sense; and which it was my intention that they should endeavour to show their knowledge of. I need only instance the words "aiery," "expiate," "franked up," "competitors" in question 5.

On the whole H. Kerakoose is most equal in his answers throughout; although he has only just obtained more than half the number at which the questions were valued. I recommend his answers being

published; not because of his having distinguished himself particularly above his fellows, or on account of any particular merit in his answers, but in order that the public may see what has and what has not been done.

JOHN BRUCE NORTON.

December 21*st*, 1849.

P. S. Since writing the above, I have examined the boys vivâ voce. They passed a very satisfactory examination.

Report on the Written Answers in Political Economy.

I have read over the answers to the questions on Political Economy, and think that on the whole they may be considered satisfactory. It is true that they do not embrace the whole of that portion of the work which the Scholars had prepared, and are of a simple and elementary character, but it is not to be inferred that the boys might not have done as well, or even better, had a more searching examination taken place. One thing must strike every one who looks at the papers, viz., that the language used is confused and ungrammatical so frequently as to leave a doubt whether the writer could have had any clear or definite understanding of what he intended to convey. I cannot but remember however, that pupils rarely sit down to a written examination under such great disadvantages, and to judge their efforts by a fair analogy, English youths who have had similar facilities for learning should be examined in the treatise of M. Say, and obliged to express themselves in his language, not their own. Besides this, few subjects in my opinion could be found so foreign to the Hindu intellect.

The answers as might be expected show many degrees of advancement, but common to all is a wonderful precision in remembering the terms and sometimes even whole phrases of the treatise from which they have been instructed, and I look upon this as gratifying, for it proves that whatever deficiencies may be justly attributed to the Native pupils, a want of attention and of anxiety to learn cannot be numbered amongst them.

Some of the youths, I may mention P. Viziarungum, Vencata Charry, Kerakoose, and Williams, though in different degrees, show

that the subject has been matter of thought as well as recollection, and when one considers the difficulty of the subject and its disputed theories, I think that their answers do them great credit. Whether it may be possible to imbue the minds of the Native community with the principles of political economy (I mean practically) or with any industrial principles, I do not pretend to say; but I do not think a greater service could be done them than to convince them of the truth of the rules which govern the "production, increase, and distribution of wealth."

EDWARD SALMON.

February 5th, 1850.

Report on the Written Answers on Euclid, and the Theory of the Steam Engine.

To the Head Master,

MY DEAR SIR,

Having gone through the Euclid Papers, I herewith return them to you. I have not got many remarks to offer on the performances of the Students, the numbers they have obtained for their answers, and with reference to which I have classed them in the order indicated in the accompanying memo., being a sufficient criterion of their proficiency. With the exception of a few—of Williams, N. Parthasarady, and Seevagooroo in particular,—who seem to be somewhat deficient in their knowledge of the subject, all have done fairly; but there is one great drawback which materially detracts from the value of all their exercises, and to which I think it necessary to advert. It is the negligent and indifferent style of writing which is apparent on the very face of them, and but for which, some of the students that now stand comparatively low, would have stood higher. This is doubtless to be ascribed in a great measure to their hurrying through the work, from their anxiety to finish it within the prescribed time; but it appears to me that by enjoining stricter attention to the writing part, the exercises would be rendered more satisfactory than they are.

Since writing the above, I have received and examined the Papers of the Students of the Lower 4th Class on the Steam Engine. Here

also the relative merits of the youths will be best seen from the numerical results of their answers. Troomal Row, you will perceive, stands foremost in this, and indeed some of his answers are good; but it will likewise be observed that the marks he has obtained fall short of one half of the total number I have assigned to the whole Paper of questions.

I remain, &c.,

V. RAMIAH.

12*th January*, 1850.

To

G. N. TAYLOR, ESQ.,

Acting Secretary to the Madras High School.

SIR,

With regard to the examination of the youths in Tamil, I regret that I was unable fully to carry out the orders of Government conveyed to me in the Extract Minutes of Consultation under date 11th December, 1849, in as much as illness prevented my attending the vivâ voce examination. Two of my friends both good Tamil scholars (the Rev. Messrs. Griffiths and Winslow,) who happened to be present kindly supplied my place and have informed me that the Senior Classes appear to be well acquainted with the works they were questioned in as far as the Native method of teaching permits, and I am sure that no pains has been spared by their respected Master Vizaga Permaul Iyer.

The written Exercises were set them by myself, namely, Translations from English into Tamil. I gave no Tamil to be translated into English as I conceive that can only furnish information as to knowledge in English. A lad may understand the exercise perfectly and be a good Tamil scholar without knowing English at all. This remark does not apply to the *same extent* with respect to English rendered into Tamil: these exercises at all events show the acquirements in their own language of those who do undertake them, and a departure from the original English meaning is not of so great consequence.

For the Senior Classes was given a short passage well known to many of our countrymen, but written in a style which no Native unless well acquainted with English and Tamil both, could translate

without sacrificing some of the elegance of either one language or the other. The second paper for the same classes was a Theme (limited to one page) " on the best mode of introducing Western know-" ledge among the People generally. Whether through the medium " of English, or through the Vernacular tongue."

The Second Class had also given them a short story in a simple form proper to be translated in the style of Tamil used by respectable Natives.

1st Class.
- T. Vencata Charry,
- P. Runganadum,
- P. Vizisrungum,
- M. Seevagooroo,
- T. Durmaroyen,
- D. Sashiah.

The English encomium on Howard was very successfully rendered by T. Vencata Charriar, the head of the senior class. It combines great closeness of translation with a style worthy of the original, and I beg to append a copy of it as it is short.*

2d Class
- C. Teeroovangadum,
- M Rajahruthnum,
- S. Nathamoony,
- S. Balakistnah,
- C. Cothundaram,
- V. Kistnama Charry.

The 2d in the marginial list gave also a creditable translation, as did No. 3, but neither gave the force of the original.

The Themes displayed a good knowledge of Tamil, especially the few first, but the substance of them is not of sufficient interest to warrant their insertion. The propriety of Proficients in English, translating English works, and the establishment of good Vernacular schools throughout the country, where such translations might as occasion served, be used, is generally urged : the youths in the senior class may on the whole be classed as per margin of the preceding para.

Class
(2) 1. V. Rajahgopaul,
(2) 2. M. Soobroyen,
(2) 3. T. Gopal Krishnen,
(1) 4. T. Rajoo,
(1) 5. C. Narrainsawmy,
(2) 6. P. Somasoondarum,
(2) 7. C Jeevamthumn,
(2) 8. V. Alagasingum,
(2) 9 M. Comarasawmy,
(2) 10. T Moonesawmy,
(2) 11 O. Barathalvar,
(2) 12. P. Soobroyen,

Those who translated the third or easier paper may stand as in the margin : the few first exercises are fairly done,but the general defect is a struggle to force in words only used in the so called High Dialect mixed with Sanscrit occasionally, and exhibiting much bad orthography. As far as I can yet judge much encouragement is required to be given to a style of Tamil suited for "the many." It is

Class.
(2) 13 C Bashium,
(3) 14 P Ramanoojum,
(2) 15 P Parthasarady,
(2) 16. N Vyapoory,
(3) 17. M. Casavaloo,
(2) 18. L. Sreenevassaloo,
(2) 19 T Mootoosawmy,
(3) 20. M Streenevassen.

well known that the Tamil thought most highly of amongst Natives, is that arbitrary form, mystified apparently for the purpose of excluding knowledge from any but a privileged and initiated class.

I have only to add that in the second marginal list I have given, there are two youths who are in the senior Tamil class, and it is probable that the errors of several arise merely from lack of English knowledge. I would not therefore assert that these lists show the exact classification as it would stand in regard to *Tamil only*. To do this correctly would require a very lengthened and tedious examination in vivâ voce which it is quite out of the question I can hope ever to give.

W. H. Bayley,
Tamil Translator to Government.

*APPENDIX.

Howard has visited all Europe; not to survey the sumptuousness of palaces, or the stateliness of temples, not to make accurate measurements of the remains of ancient grandeur; not to collect medals or collate manuscripts;—but to dive into the depth of dungeons; to plunge into the infection of Hospitals; to survey the mansions of sorrow and pain; to attend to the neglected, to visit the forsaken, and compare and collate the distresses of all men in all countries.

ஹவர்டென்பவர் பூரோப்கண்டமெங்குஞ் சஞ்சாரஞ்செய்தது. அரண்மனைகளினுடைய சிறப்பையாவது, ஆலயங்களினுடையகாம்பிரியத்தையாவது பார்வையிடுதற்காகவாயினும், பூர்வகாலத்தினுடையபெருமையின்மிகைகளைத்திருத்தவளவிடற்காகவாயினும், நாணயங்கள் அல்லது கண்ணியமுத்திரதங்களைச்சேகரிக்கவாயினும், இலிகிதமூலக்கிரந்தங்களைப்பரிசோதிக்கவாயினுமன்று, ஆனால். சிறைச்சாலைகளினுட்டகுந்தாராய்ச்சிசெய்யவும், தருமவயித்தியசாலைகளிலடையுந் தொந்துயியாதிகளைக் கூலங்கவிமாயறியவும், துயரமுந்துன்பமுந்தங்கியவில்லங்களைப்பரிசோதனைசெய்யவும், சகாயர்கிதர்களைக்குறித்துக்கவனிக்கவும், அனாதைகளைப்பார்வையிடவும், எல்லாத்தேயத்தினுமுள்ளவெல்லாமனிதர்களுடைய துன்பங்களையுமொப்பிட்டு ஆராய்ச்சிசெய்யவுங்கருத்துக்கொண்டவர் சஞ்சரித்தார்.

W. H. Bayley

From

Captain J. J. Losh,

Ag. Mahratta Translator to Government.

To

The Acting Secretary,

Madras University.

Sir,

1. I have the honor, for the information of the President and Governors of the Madras University, to submit the following report on the recent examination in Mahratta of the Students of that language belonging to the High School.

2. In compliance with the request of the Head Master, the written exercises were performed on Wednesday the 19th ultimo, under the supervision of Kristna Row the Moonshee attached to the Mahratta Translator's office. The vivâ voce examination was superintended by me, in obedience to the orders of Government, on Friday the 21st ultimo.

3. Of the Mahratta Students, twenty-nine in number, (one of whom did not attend the examination) divided into four classes only the seven belonging to the fourth or highest class undertook to make translations, in writing, from Mahratta into English; and of these one only, Ragoonatha Row, translated from English into Mahratta.

4. It being understood that Ragoonatha Row (who appears to have been considered at the preceding Annual Examination the best Translator) was much more advanced than the rest of the Students of his Class, separate papers, as per margin, were given to him to translate.

From Mahratta into English 23 lines of Manuscript, copied in the Mod character from 27 lines in print, Devanagari character, of Pandoorung Gurooba's translation of the Rev. T. H. Gallaudet's Youth's Book of Natural Theology.	Translation completed in less than two hours, nearly correct.
From English into Mahratta 20 lines of Manuscript (copied from 28 printed lines) extracted from Col. W. Fullarton's letter to Lord Macartney and the Select Committee of Fort St. George.	Translation finished in an hour and three quarters, faithful and nearly correct but not in pure Mahratta, containing several words not to be found in Mahratta Dictionaries and current only in the dialect of that language in use in the Madras Presidency, and scarcely legible from the badness of the hand-writing.

5. The other Students belonging to the 4th Class were required to translate into English 33 lines of print, (Devanagari character) copied in 25 lines Manuscript (Mod character) of Ball Gungather Shastry's introduction to the History of India. The translations of the above, which were performed in about two hours, are of various degrees of merit, none being quite correct, while some are very faulty, and others left unfinished. The names of the Translators are inserted in the margin, in order, according to their respective merits, all the papers given for translation and the translated papers are transmitted herewith.

Sashachellum,
Kerakoose,
Sham Row,
Sreenevassa Row,
Teroomul Row,
Rungiah,
Teagaroyen,

Reading sentences from Mahratta Books and explaining the meaning of them; writing Mahratta from dictation to test the correctness of spelling and answering questions in the Mahratta Grammar and Mahratta History.

6. The result of the examination on Friday the 21st ultimo was, upon the whole, satisfactory, but scarcely more so than that of any former similar examination at which I have been present. Some of the best Mahratta scholars appear to have quitted the High School since the examination in 1848, and of those who remain, Ragoonatha Row is too much the best that he must be classed by himself.

7. The names of the others are inserted in the margin, in order, according to the merit of their respective performances.

4th Class.
G Sashachellum,
C. Sham Row,
T. Teroomul Row,
H. Kerakoose,
A. Streenevassa Row,
P. Rungiah.

2d Class.
P. Allagasimgum,
C. Narasimhaloo,
A. Govindoo Row,
M. Ramasawmy,
P. Mooroogoo.

3d Class.
D. Teagaroyen,
C. Narrainappa,
M. Soobroyaloo,
C. Ramiah,
C. Aroonagherry,
P. Narasimhaloo,
T. Sreenevassaloo,
P. Parthasarady,
V. Hanoomuntta Row,
H. Vencata Row,
T. Vencata Row,
M. Ragavooloo.

1st Class.
Causeram Dava.
M. S. Theer Chund,
S. Sevasunkanun,
A. Arathoon.

8. With the exception of those in the fourth, and a few of those of the third class, the Hindoo Students were not sufficiently acquainted with English to answer in that language the questions put to them, and were, therefore, obliged to give answers in their own languages.

9. Very few of the Scholars, even in the Highest Class, appear to be acquainted with the Mahratta numerals, of which, both in figures and letters, they should certainly be required to attain a competent knowledge.

I have the honor to be,
Sir,
Your most obedient Servant,
J. J. Losh,
Ag. Mah. Translator to Govt.

Mahratta Translator's Office,
3d January, 1850.

Madras, *27th December*, 1849.

Report on the Teloogoo Classes.

Being ordered to examine and report on the Telugu Classes in the Madras University, I have examined the pupils in the books they have been studying. The best proficients may be classed thus:

Class I.	1.	B. Krishnasawmy,.....	No. 264 in the list.
	2.	S. Soondarum,.....	40
	3.	A. Narrain Row,.....	249
II.	1.	T. Saccaji Row,.....	300
	2.	P. Chinatumbee,.....	575
	3.	N. Parthasarathy,.....	208
	4.	C. Balakrishnaya,.....	428
III.	1.	Ramanjooloo,.....	530
	2.	P. Varadachary, ...	607
	3.	G.Vencata Narayanainah,	303
	4.	C. Vuradarajooloo, ...	566

The rest of the pupils have performed no written exercises, and it is scarcely worth while to arrange them.

The pupils now named were already familiar with the spoken Teloogoo before they entered the University. It is their mother tongue excepting as regards one pupil Saccaji Row.

They wrote down a Teloogoo Letter on ordinary business from dictation, with good success. They also wrote English translations of the same with accuracy. The Teloogoo hand-writing is in gene-

ral good. There were a few errors in spelling In translating into Teloogoo from English some erred by using an affected pedantic style which the Tutors admire but which is useless.

In vivâ voce they read a few common Teloogoo letters and construed some pages of an easy poem. In this part of their studies there is an improvement, formerly the pupils were employed in reading a poem (the Mana Charitra) confessedly intricate in the style. The book they now read (Harischandra Davipada) is easy and useful.

The higher classes answered grammatical questions creditably. The native tutors added a variety of questions which were generally answered by reciting canons written in Teloogoo verse. Particular attention has evidently been directed to these intricate and fantastic rules which are of no avail to the learner. Indeed these refinements have impeded the progress of the classes. The pupils have shown laudable diligence, and great intelligence, but ought not to be called on to study useless rules required by poets alone, and fruitless even to them.

The lowest class continues to make no progress, and I still attribute this to the injudicious routine wherein they are not allowed to read easy and useful exercises :—while their attention is given to grammatical refinements which can never benefit them.

C. P. Brown,
Teloogoo Translator to Government

Rules for Lord Elphinstone's Endowment.

The sum of 4,200 Rupees having been offered to the Governors of the Madras University, on behalf of certain Members of the Hindoo Native Community of Madras, for the purpose of Founding an Endowment in the High School of that Institution in the name of the Founder Lord Elphinstone, and according to such Rules as they may deem most appropriate; and such sum having been accepted and invested for such object, the following Rules have been framed for establishing such Endowment.

1. The Endowment shall consist of a Scholarship to the amount of 12 Rupees per month, to be denominated "Lord Elphinstone's" Scholarship, and of an Annual Prize of a purse of 5 Gold Mohurs for the best English Essay, to be publicly read at the Anniversary, and to be denominated "Lord Elphinstone's Prize."

2. The Scholarship shall be bestowed upon a Hindoo Scholar of the first Class, to be selected by the Head Master as having shown the most distinguished merit at the Annual Public Examination; such selection to be confirmed by the Board of President and Governors.

3. The Scholarship shall be held for the period of 5 years, or until the Scholar attains his "Proficient's" degree.

4. No Scholar shall be selected except on the express understanding that he is to remain to take a "Proficient's" degree.

5. The Board shall have authority of deprivation in cases of negligence of studies, absence from School, or other misconduct.

6. "Lord Elphinstone's Prize" shall be awarded to a Hindoo Scholar of the 4th Class of not less than one year's standing in that class.

7. The subject for the Prize Essay shall be given out two months at least, and be delivered in two weeks at least before the Anniversary.

8. The text of the Essay shall not exceed 50 ordinary printed octavo pages, and may be less according to the nature of the subject.

9. The Head Master shall take precautions to prevent any communication between the Candidates and others during the time of actual composition: and the use of Books is prohibited, except with the previous knowledge of the Head Master of the Books to be consulted, and for the purpose of avowed reference or quotation, but not for the purpose of copying as part of the composition.

10. The Head Master shall be at liberty to recommend, but the selection of the Prize Essayist shall rest with the Board.

The Prize shall be publicly conferred on the day of the celebration of the Anniversary by the hands of the President, unless the Governor (or Member in Council presiding) shall be pleased, by his own hands, to confer it.

G. N. TAYLOR,
Acting Secretary.

Rules for Government Scholarships.

1. There shall be three classes of endowed "*Government Scholars.*"

2. The first class of Government Scholars shall be Members of the fourth (or highest) class of the High School. The second class shall be Members of the 3d class, and the third shall be Members of the 1st or 2d class of the School.

3. The Government Scholars of the first class, shall receive ten, those of the 2d seven, and those of the 3d five Rupees per mensem.

4. No School fees shall be paid by Government Scholars.

5. The selection of these Scholars shall be decided by open public competition, and on the results of the Annual Examination.

6. Upon any vacancies arising (after the first Scholars shall have been elected) public notice thereof shall be given by an affix in the respective class rooms; and candidates must give in their names to the Head Master two months before the 1st day of the next Annual Examination, and shall not be otherwise admissible as such, except under special circumstances and from special cause.

7. The Examiners shall elect, subject to the confirmation of the Board of the President and Governors of the University.

8. Each Scholarship shall be held for two years, or until the Scholar shall succeed to a vacancy in a higher class of the Scholarships, if the Scholar shall so long remain in the School; but if any Scholar of inferior stipend happens to be in a School class in which he is competent to hold the higher, he is at once to succeed to any vacancy arising therein, unless it shall be otherwise ordered by the Board for special cause.

9. The Board shall have authority of deprivation in cases of negligence in studies, absence from School, or misconduct.

G N. TAYLOR,
Acting Secretary.

Amended Rules for Patchiappah's Endowments at the Madras University.

1. Patchiappah's Endowment shall consist of "Studentships" of the Collegiate Department, "Endowed Scholarships," and "Free Scholarships" of the High School.

2. As the Trustees of Patchiappah's charities have no power over the principal of their Funds, but at the same time it is expedient that a permanent provision be made for securing the stipends, a general resolution has been past by the Trustees whereby the sum of 2,500 Rupees is to be placed to the credit of the Madras University for the purpose of such stipends on 1st January each year. And a similar resolution is to be passed in case the number of Students or Scholars or stipends be hereafter increased.

3. All arrears, or sums accumulating from vacancies or other causes, shall be disposed of by the President and Governors of the University for the purpose of the endowment.

4. No Scholar "Endowed" or "Free" shall be admissible except on the express understanding that he is to remain to take a "Proficient's" degree.

5. It shall be the duty of all Patchiappah's Scholars, both "Endowed" and "Free," to attend at each annual celebration of Patchiappah's Founder's day, and there express in such public manner and form as the Trustees shall direct, their thanks for their appointment.

6. The President and Governors shall have power of deprivation in cases of negligence of studies, absences or other misconduct.

7. The "Studentships" shall be three, of 30 Rupees per mensem each; and the mode of admission to them shall be regulated by Rules hereafter to be framed as soon as a Collegiate class shall be organized in the University.

8. The "Endowed Scholarships" shall be formed from and out of the stipends of the "Studentships," until the organization of a Collegiate Department in the Madras University and admission of "Patchiappah's Students" therein. They shall consist of one of 20 Rupees per mensem, four of 15 Rupees per mensem, and one of 10 Rupees per mensem.

9. The "Endowed Scholarships" of 20 Rupees per mensem shall be appropriated to a Scholar in the fourth class, and shall continue for one year. The "Endowed Scholarships" of 15 Rupees shall be appropriated to Scholars in the third class, and shall continue for 2

years; and the "Endowed Scholarships" of 10 Rupees per mensem shall be appropriated to a Scholar of the first class upon his promotion to the second class and shall continue for 3 years.

10. The "Endowed Scholars" shall be selected out of Patchiappah's Free Scholars, by the Head Master according to merit upon passing the Annual Public Examination of the High School, and reported by the Secretary for approval by the President and Governors of the University, and their appointment shall be then notified by the Secretary to the Trustees of Patchiappah's charities for confirmation.

11. It shall be the privilege of the "Endowed Scholars" of the fourth class to compose and deliver (subject to the approval of the Trustees of Patchiappah's charities) the English address in praise of Patchiappah's Educational charities at the annual celebration of Patchiappah's Founder's day.

12. The "Free Scholarships" shall be 30 in number, and the stipend shall be 4 Rupees per mensem each, wherewith to pay the High School Fee and they shall be held for the term of 4 years.

13. The number of vacancies of Free Scholarships shall be reported by the Secretary of the Madras University on 1st January each year, and the Trustees shall thereupon propose them as objects of competition for the pupils of any School or Schools supported by Patchiappah's charities. Candidates for admission to the 1st or lowest class shall be under the age of 14, but those qualified for the higher grades in the University shall be admitted at the following ages respectively:—if qualified for the 2d class up to the age of 16—for the 3d class 18—for the 4th or highest class 20; and there shall not be less than 3 for each vacancy. The best of such Candidates having been selected upon an examination to be held between 1st January and Patchiappah's Founder's day, the actual appointments to the vacant "Free Scholarships" shall be made by the Trustees on Founder's day in such public manner as they may think fit. The Board of President and Governors of the University shall have authority to reject on account of incompetency.

G. N. Taylor,
Acting Secretary.

Rules for awarding "Patchiappah's Vernacular Prize."

1. That an Annual Prize shall be established of the value of 70 Rupees, and be denominated "Patchiappah's Vernacular Prize."

2. Such Prize shall be awarded to a Scholar of the 4th class, if not of less than one year's standing in that class.

3. The Prize shall be awarded for the best exposition (as distinguished from mere translation) in some Vernacular language, to be from time to time selected by the Head Master, of any Discourse, Lecture, Essay, or Treatise, being the work of an English author on any subject of Science, Philosophy, or Literature.

4. The subject for the Exposition shall be given out three months at least before the Anniversary, and the Exposition be delivered in two weeks at least before the Anniversary.

5. The Text of the subject to be expounded shall not, in general, exceed 50 ordinary printed octavo pages, and may be less according to the nature of the subject.

6. A Committee shall be selected by the Board to award the Prize.

7. The Prize shall be publicly conferred by the President on the day of the Anniversary.

8. The Prize shall consist of bound Books, lettered and embellished like the other Prize Books, and with the addition of the letters "Patchiappah's Vernacular Prize;" and these Books shall be inscribed in the hand of the Secretary with the year, the name, and the subject of the Exposition.

G. N. Taylor,
Acting Secretary.

Abstract Account of the actual Disbursements of the Madras University, during the last six months of the official year 1848-49, *or from* 1*st November*, 1848, *to* 30*th April*, 1849.

	Rs.	A.	P.	Rs.	A	P.
HIGH SCHOOL.						
Amount paid the Establishment including the Secretary's Department, and Government Scholarships, from 1st November, 1848, to 30th April, 1849, - - - - - - -	14,294	8	0			
House-Rent from do. to do.	1,260	0	0			
				15,554	8	0
CONTINGENT CHARGES.						
Books and Book-binding, - -	139	1	6			
Furniture, - - - - - -	45	0	0			
Printing, - - - - - -	43	11	0			
Stationery, - - - - -	410	10	11			
Sundries, - - - - -	554	6	1			
Patchiappah's Endowed Scholarships,	450	0	0			
Elphinstone's do. Scholarship,	72	0	0			
				1,714	13	6
				17,269	5	6
DEDUCT.						
School-Fees realized during the above period, - - - - - -	2,442	0	0			
Amount realized for books lost by Scholars, - - - - - -	5	15	0			
				2,447	15	0
Net Amount of Expenditure, - -	.....		..	14,821	6	6

MADRAS UNIVERSITY,
30*th July*, 1849.

Abstract showing the Advances received from Government on account of the Madras University, from 1st November, 1848, to 30th April, 1849; the actual Disbursements during the same period, and the Balance of Cash remaining on the 30th April, 1849.

	Rs.	A.	P.	Rs.	A	P.
Balance of Cash on the 31st October, 1848, appropriable to Disbursements of the year, - -	7,534	3	3			
Amount of advance received under orders of Government, dated 19th December, 1848, . - - - -	10,000	0	0			
				17,534	3	3
DEDUCT.						
Disbursements as per Abstract Account from 1st November, 1848, to 30th April, 1849, - - -	.....			14,821	6	6
Balance of Cash on the 30th April, 1849, appropriable to future Disbursements, - - -	.....	..		2,712	12	9

Errors Excepted,

G. N. TAYLOR,
Acting Secretary.

Abstract Account of the Actual Disbursements of the Madras University, during the first six months of the official year 1849-50, *or from* 1*st May to* 31*st October*, 1849.

	Rs.	A	P.	Rs.	A.	P.
HIGH SCHOOL.						
Amount paid the Establishment, including the Secretary's Department and Government Scholarships, from 1st May to 31st October, 1849, - - - - -	14,380	8	0			
House-Rent from do. to do. -	1,260	0	0			
				15,640	8	0
CONTINGENT CHARGES.						
Books, and Book-binding, -	864	10	4			
Furniture, - - - - - -	10	0	0			
Printing, - - - - - -	262	5	4			
Sundries, - - - - - -	320	2	6			
Patchiappah's Endowed Scholarships,	480	0	0			
Elphinstone's do. Scholarship,	72	0	0			
				2,009	2	2
				17,649	10	2
DEDUCT.						
School-Fees realized during the above period, - - - - - -	2,452	0	0			
Amount realized for Books lost by Scholars, - - - - - -	39	4	0			
Amount of Interest realized for one year, on Elphinstone Endowment Bonds, in the Madras Bank, - -	154	14	0			
				2,646	2	0
Net Amount of Expenditure, - . -	....	.	.	15,003	8	2

MADRAS UNIVERSITY,
27th November, 1849.

Abstract showing the Advances received from Government on account of the Madras University, from 1st May to 31st October, 1849, the actual Disbursements during the same period, and the Balance of Cash remaining on 31st October, 1849.

	Rs.	A.	P.	Rs.	A.	P.
Balance of Cash on the 30th April, 1849, appropriable to Disbursements of the year, - -	2,712	12	9			
Amount of advance received under orders of Government, dated 18th May, 1849, - - -	10,000	0	0			
Do. do. 18th Sept. 1849,	10,000	0	0			
				22,712	12	9
DEDUCT.						
Disbursements as per Abstract Account from 1st May to 31st October, 1849, - - - - -	.....	..	..	15,003	8	2
Balance of Cash on the 31st October, 1849, appropriable to future Disbursements, - - - -	.....	.	.	7,709	4	7

Errors Excepted,

G. N. TAYLOR,
Acting Secretary.